Medical Library

Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly SEP 27 1943 Price 1s.

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—30TH YEAR. SYDNEY, SATURDAY, AUGUST 7, 1943. No. 6.

COMMONWEALTH OF AUSTRALIA.—DEPARTMENT OF HEALTH

HAY FEVER EXTRACTS

PHYSICIANS ARE ADVISED TO OBTAIN ALL "COMMONWEALTH" EXTRACTS, BOTH FOR TESTS AND TREATMENT, DIRECT FROM THE COMMONWEALTH SERUM LABORATORIES, PARKVILLE, VICTORIA.

The following Extracts for testing to determine the nature of the sensitiveness present can be supplied immediately. (Issued in Capillary Tubes, with controls.)

POLLEN PROTEIN EXTRACTS:
Barley Grass, Bent Grass, Broom, Canary Grass, Capeweed, Chenopodium, Clover, Cocksfoot Grass, Cosmos, Couch Grass, Dahlia, Dock, Hawthorn, Iceland Poppy, Kangaroo Grass, Kentucky Blue Grass, Maize Pollen, Murray Pine, Paspalum, Pepper Tree, Pine, Plantain, Prairie Grass, Privet, Rhodes Grass, Rose, Rye Grass, Sorrel; Sterile Brome, Sunflower, Sweet Pea, Sweet Vernal, Timothy Grass, Wattle, Wheat Pollen, Wild Oats, Yorkshire Fog Grass, Lucerne Pollen.

MISCELLANEOUS:
Bee Extract, Coconut Fibre, Fish Glue, House Dust, Insectibane, Kapok, Linseed, Lucerne Chaff, Orris Root, Wheat Chaff Dust.

EPITHELIAL PROTEIN EXTRACTS:
Cat Hair, Cattle Hair, Dog Hair, Duck Feathers, Goat Hair, Goose Feathers, Hen Feathers, Horse Dander, Pig Hair, Rabbit Fur, Sheep's Wool.

FOOD EXTRACTS:
Almond, Apple, Banana, Barley, Bean, Beef, Brazil Nut, Cabbage, Carrot, Celery, Coffee, Egg White, English Walnut, Fowl, Honey, Lamb, Milk (defatted), Oatmeal, Onion, Orange, Ovo Mucoid, Paw Paw, Pea, Peanut, Pepper, Pineapple, Pork, Potato, Rice, Rye Flour, Tea, Tomato, Wheat Flour, Whiting.

The following Extracts ready for use in treatment can be supplied immediately. (Put up in Rubber-capped Containers holding 2·5 c.cm. and 5 c.cm.)

POLLEN PROTEIN EXTRACTS:
Barley Grass, Bent Grass, Broom, Canary Grass, Capeweed, Chenopodium, Clover, Cocksfoot Grass, Cosmos, Couch Grass, Dahlia, Dock, Hawthorn, Iceland Poppy, Kangaroo Grass, Kentucky Blue Grass, Maize Pollen, Murray Pine, Paspalum, Pepper Tree, Pine, Plantain, Prairie Grass, Privet, Rhodes Grass, Rye Grass, Sorrel, Sterile Brome, Sunflower, Sweet Pea, Sweet Vernal, Timothy Grass, Wattle, Wheat Pollen, Wild Oats, Yorkshire Fog Grass, Lucerne Pollen, Rose.

EPITHELIAL PROTEIN EXTRACTS:
Cat Hair, Cattle Hair, Dog Hair, Duck Feathers, Goat Hair, Goose Feathers, Hen Feathers, Horse Dander, Pig Hair, Rabbit Fur, Sheep's Wool.

FOOD EXTRACTS:
Egg White, Milk, Wheat Flour.

MISCELLANEOUS:
Bee Extract, Coconut Fibre, House Dust, Insectibane, Kapok, Linseed, Lucerne Chaff, Orris Root, Wheat Chaff Dust.

The above Hay Fever Extracts can also be supplied mixed to prescription, but seven days' notice is required.

MORE THAN SIX EXTRACTS WILL NOT BE SUPPLIED IN ANY ONE MIXTURE.

A Booklet dealing with the use of the Extracts will be forwarded on application.

COMMONWEALTH SERUM LABORATORIES

PARKVILLE, N.2, VICTORIA, AUSTRALIA

FELLOWS'

COMPOUND SYRUP

helps to overcome the devitalizing effects of respiratory infections, pregnancy, dietary deficiencies; and it is an excellent appetite stimulant. This dependable, bitter, and reconstructive Tonic contains valuable mineral salts; and it has been prescribed by doctors the world over for more than 60 years.

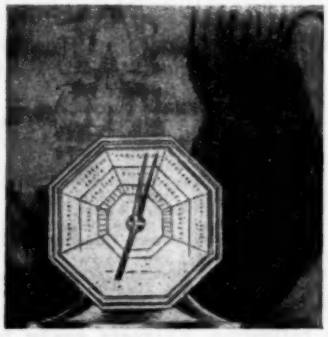
Such care is devoted to the preparation of FELLOWS' SYRUP that only by making sure of the name "FELLOWS" can you be certain of the same unvarying quality.

Samples on Request

Fellows Medical Mfg. Co., Inc.

26 Christopher Street New York, N. Y.

The "Unsettled" Stomach



The stomach, like the weather, becomes easily "unsettled." There is nothing one can do about the weather, but the stomach that overproduces its acid secretions to its own and its owner's discomfort can be brought to reason by CAL-BIS-NATE.

Cal-Bis-Nate does quick work in gastric neutralization by introducing sodium bicarbonate and magnesium carbonate. This effect is made lasting by calcium carbonate and bismuth.

The effect is carried a step further by *colloidal kaolin*, which, in conjunction with the bismuth, protects and soothes the irritated mucous membrane of the digestive tract.

Cal-Bis-Nate (powder) is supplied in jars containing 12 and 4 ounces. The dose is one or two teaspoonfuls in water.

Cal-Bis-Nate combines the best of the old and of the new principles in the treatment of gastric diseases in which alkalization is indicated. So well does it settle the stomach that it frequently succeeds in uncomplicated nausea of pregnancy when other measures fail.

• • •

For gastric hyperacidity

CAL-BIS-NATE

Trial supply sent on request. Please use letterhead.

WILLIAM R. WARNER & CO. PTY. LTD., 508-528 RILEY STREET, SYDNEY, N.S.W.

THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—30TH YEAR. SYDNEY, SATURDAY, AUGUST 7, 1943. No. 6.

Table of Contents.

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES— Page.
Dyspeptic Symptoms in Soldiers, by Harold R. Love, M.B., B.S., M.R.A.C.P. .. 101

REPORTS OF CASES—
A Fatal Blood Transfusion Reaction Apparently due to the Rh Factor, by Noel C. Newton and A. H. Tebbutt .. 109

REVIEWS—
Ophthalmic Nursing .. 110

LEADING ARTICLES—
Social Security and Medical Practice in Canada .. 111

CURRENT COMMENT—
Industrial Dermatitis .. 115

ABSTRACTS FROM MEDICAL LITERATURE—
Gynæcology .. 116
Obstetrics .. 117

BRITISH MEDICAL ASSOCIATION NEWS— Page.
Scientific .. 118
New South Wales Branch News .. 118

CORRESPONDENCE—
The National Health and Medical Research Council 119

NAVAL, MILITARY AND AIR FORCE—
Appointments .. 120
Casualties .. 120

NOMINATIONS AND ELECTIONS .. 120

BOOKS RECEIVED .. 120

DIARY FOR THE MONTH .. 120

MEDICAL APPOINTMENTS: IMPORTANT NOTICE .. 120

EDITORIAL NOTICES .. 120

SUPPLEMENT NUMBER 21 ON WAR MEDICINE AND SURGERY:
Malaria.

DYSPEPTIC SYMPTOMS IN SOLDIERS.

By HAROLD R. LOVE, M.B., B.S., M.R.A.C.P.,
Lieutenant-Colonel, Australian Army Medical Corps.

(From an Australian General Hospital.)

BETWEEN August, 1941, and December, 1942, out of 15,380 patients admitted to an Australian base hospital, 908 (5·9%) were referred with diagnoses of various types of dyspepsia. The information embodied in this report was collected from a series of 358 patients out of a total of 422 admitted to hospital between July 1 and December 31, 1942. Detailed information in the balance of these cases was either not available or insufficiently complete for inclusion.

It became evident at an early stage, firstly, that the symptoms described by these soldiers conformed in the large majority of cases to no definite text-book pattern and corresponded to no particular organic lesion, and secondly, that in a large percentage of cases they were associated with manifestations of autonomic instability, with anxiety conditions and with other psychopathies. An attempt was therefore made to obtain in each case a detailed account of symptoms, a psychiatric appreciation of the subject, and a final correlation of these data with the findings on clinical and special investigation. Special investigations consisted of X-ray examination after an opaque meal, fractional test gruel meal examination, examination of fæces for occult blood, and a cholecystographic examination if gall-bladder disease was suspected. Not all investigations were carried out in every case. No gastroscopic examinations were made.

SYMPTOMS AND SYMPTOM TYPES.

Of all the patients, 222 (68%) had, prior to enlistment, suffered from dyspepsia for periods varying from a few weeks up to twenty-five years, with an average duration of 6·1 years. The length of army service in this group varied from a few days up to three years and averaged 10·0 months. In the group (32%) whose members had developed dyspepsia since enlistment, the average duration of army service prior to this admission to hospital was 22·7 months and the average duration of symptoms was 10·7 months. In neither group was there any particular peak of time incidence of admission to hospital with relation to service, but there was a fairly even scatter over periods from a few days up to three years. This relationship of duration of symptoms to length of service remained fairly constant throughout the various types of dyspepsia. Of proved cases of duodenal ulcer, for instance, 9 out of 27 arose during service, the average length of service being 26·5 months and the average duration of symptoms 12·0 months. Of the two-thirds of these men who had symptoms prior to enlistment, the average duration of service prior to this admission to hospital was 10·9 months.

In 325 cases (90·8%) the principal complaint was of abdominal pain of various types. In 20 (5·6%) the complaint was of persistent nausea and vomiting without pain, and in 13 (3·6%) pyrosis was the sole symptom. Both vomiting and pyrosis were, of course, extremely common in association with the various types of dyspeptic pain to be described.

Weight loss occurred in 53% of all types of dyspepsia, the average being a loss of about 12·5 pounds over a period of 5·5 months; 5% of the men had actually gained in weight, while the weight of 42% had not varied significantly. There was no significant variation in weight loss between the various symptom groups, nor between men with proved ulcers and dyspeptics with normal radiological findings. The greatest single weight loss occurred in a case of *anorexia nervosa* (42 pounds in three months).

Vomiting as a symptom also had no characteristic incidence in any one group, classified according to symptoms or to radiological findings. Vomiting, "considerable" to "severe" in type, was present in 31% of all cases; in 30% occasional vomiting was present, and in 39% no vomiting worth mentioning was reported. Of the small

group of patients with duodenal ulcers, equal numbers had severe, occasional or no vomiting—a variation which cannot be considered statistically significant.

Estimation of dental fitness again revealed no particular group incidence of defective teeth. Of the total group, good teeth were present in 37% and well-fitting complete or partial dentures were present in 34%, while the balance of the patients were dentally deficient or unfit; 6% of the patients were completely edentulous and either did not possess dentures or stated that they could not wear them.

No particular relationship could be determined between consumption of alcohol or tobacco and any particular type of dyspepsia. No comparison with non-dyspeptics was available in these matters, but it was thought that neither alcohol nor tobacco consumption by these dyspeptics was abnormally high.

The average age of all patients was 33·3 years. Variations in age in the different symptom groups are shown in Table II.

The types of pain of which these soldiers complained fell into three categories: (i) straightforward post-prandial pain, (ii) continuous pain with post-prandial exacerbations, and (iii) pain independent of and unrelated to the taking of meals. The dyspeptic nature of this last-mentioned type of pain lay in the statement made that it occurred or became worse when the patient ate "heavy diet"—that is to say, red meats and fried, roast or otherwise fatty or greasy foods—and was relieved or abolished by "light" diet, consisting of white meats, eggs and non-fatty articles of food. This particular relationship of pain to diet, as apart from the relationship to actual meals, occurred also in the second type of pain mentioned above, and also in those types of actual post-prandial pain in which the pain was not completely and immediately relieved by the taking of food or alkalis. The various types of pain can be tabulated as follows:

I. *Post-Prandial Pain.*

(*a*) "Hyperchlorhydric" or "duodenal ulcer" type, occurring from one to four hours after meals, and often in the early morning, usually situated in the epigastrium or right hypochondrium, and completely and immediately relieved by the taking of food or alkaline powder. This type of pain occurred in 40 cases (11·2%).

(*b*) "Alkali-responsive" type, similar to the former type, but occurring from half an hour to three hours after meals, and completely and speedily relieved by the taking of alkalis, but not relieved and often exacerbated by the taking of food. Cases of this type numbered 44 (12·3%).

(*c*) "Food-responsive" type. Pain in this group occurred at intervals varying from immediately to four hours after meals; it was not relieved by the taking of alkalis, but was relieved by eating. The homogeneous character of this small group (16 cases—4·5%) is questionable. At least two cases were associated with low fasting blood sugar figures, and a large proportion of the patients were neurotic.

(*d*) A type partly relieved by the taking of alkalis or milk. This large and important group was characterized by pain arising at intervals varying from immediately to two hours after meals, the pain being partially, incompletely and temporarily relieved by the taking of alkalis and sometimes milk. This type is that described as occurring in their chronic gastric group by Gill, Berridge and Jones[1] and may be conveniently described as such (91 cases—25·4%).

(*e*) A type not relieved by the foregoing measures. The final category of post-prandial pain covers one which occurs as in the previous group, but in which no relief whatever is obtained by the taking of food or of alkalis or by any factor at all, according to the patient's descriptions, except rest and "light" diet. This type of pain may be conveniently and non-committally described by the term dyskinetic. It occurred in 43 cases (12·0%).

II. *Continuous Pain.*

Continuous dull gnawing or aching epigastric or left or right hypochondrial pain, which becomes worse within periods varying from a few minutes to two hours after meals. Sometimes the exacerbation is relieved by the taking of alkalis, only the earlier constant discomfort being left as a residuum (11 cases—3·1%); but more often (33 cases—9·2%) no relief is obtained. These two types are obviously closely related to the types mentioned under Sections I (*d*) and I (*e*) respectively.

III. *Pain Unrelated to Meals.*

A type of pain related to diet and not to meals. It is usually epigastric or hypochondrial; but sometimes (in one instance, in a case of active duodenal ulcer) it may be referred to the iliac fossæ. This type of "unrelated" pain obviously calls for accurate differential diagnosis before it can be accepted as of dyspeptic origin.

In the group of 47 patients (11·8%) with this last-mentioned type of pain, the following conditions were diagnosed:

Active duodenal ulcer	2 cases
Active gastric ulcer	1 case
Healed gastric ulcer	1 case
Hepatitis	2 cases
Probable coronary disease	2 cases
"Not yet diagnosed" (hepatic friction rub)	1 case
Probable gall-bladder lesion	2 cases
Spastic colon	6 cases
Dyskinetic dyspepsia	30 cases

In the dyskinetic dyspeptic patients in this group, pyloro-spasm, increased gastric rugal markings (two cases) and visceroptosis were noted on radiological examination. Twenty-five out of the thirty showed anxiety, depression or hypochondria.

These various types of pain encountered, as well as the small pyrosis and emesis groups, and their relationships to radiological, test meal and psychiatric findings, are set out in Table I.

Interpretation of Symptom Types.

Consideration of these types of dyspeptic and pseudo-dyspeptic pain makes it immediately and abundantly clear that our lack of knowledge of their physiological mechanisms is almost complete, and that, therefore, any hard and fast rules as to their interpretation are both theoretically and clinically impossible. The clinical reality of the various symptom types is, nevertheless, it is maintained, of importance. There is a constancy of clinical type for the individual patient, and change of type of pain (such, for instance, as may occur in duodenal ulcer during an acute exacerbation and sometimes before hæmorrhage or perforation) is both readily observable and clinically significant. In the second place, consideration of the various incidences of organic disease and neurosis, and of the test meal findings, bears out the distinctions made on clinical grounds, not to an absolute degree, but in a statistically confirmatory manner.

Type I (*a*), for instance, is the classical "duodenal ulcer" type of pain. The figures from this series of cases indicate that 48% of patients with active duodenal ulcers complain of this type of pain, and furthermore, that 27% of men suffering from this type of pain have active duodenal ulcers. A further 8% have active gastric or healed ulcers of peptic type, and 11% have the picture of an "irritable duodenum"; other minor abnormalities make up a total of 51% of positive radiological findings of various types in this group. In the symptom complex there appears to be nothing to distinguish the ulcer patient from the one in this group who has no radiological signs of ulcer. Gill, Berridge and Jones have stated that the absence of the classical type of remission in the history is significant in distinguishing on clinical grounds ulcer from duodenitis; but in this series only 50% of patients with active ulcers had typical remissions, while an exactly similar percentage of men with no radiological signs of ulcer but with similar pain gave the typical history of remissions. Certainly it must be noted that no patient with "irritable duodenum" in this group had remissions of the type in question.

The other characteristics of this group, beside the typical clinical history, are the relatively low incidence of neurosis and the relatively high incidence of hyperchlorhydria in the test meal findings. The immediate symptomatic response to treatment is excellent; but eventual prognosis

TABLE I.

Assessment of Clinical Observations.	Radiological Findings.													Test Meal Findings.					Psychiatric Findings.		
	Total.	Duodenal Ulcer.		Gastric Ulcer.		Carcinoma.	Gall-bladder Disease.	Irritable Duodenum.	Abnormal Gastric Rugæ.	Pylorospasm.	Miscellaneous.	Radiologically Normal.	No X-ray Examination.	Achlorhydria.	Hypochlorhydria.	Normal.	Hyperchlorhydria.	Not Examined.	Anxiety.	Other Psychopathy.	Normal.
		Active.	Healed.	Active.	Healed.																
Symptom Types:																					
1. (*a*) Hyperchlorhydric pain	40	10	1	1	1	—	—	4	1	—	1	18	3	—	5	6	14	15	8	3	29
(*b*) Alkali-responsive pain	44	5	1	—	1	—	1	1	2	1	—	26	6	1	8	13	5	17	11	3	30
(*c*) Food-responsive pain	16	1	—	—	1	—	—	2	—	—	—	8	4	—	3	4	—	9	7	2	7
(*d*) "Gastritic" (Gill) pain	91	3	3	4	2	—	1	7	4	3	2	43	19	1	22	38	19	11	46	24	21
(*e*) Dyskinetic pain	43	—	1	—	1	—	2	1	—	3	1	24	10	2	9	17	5	10	19	12	12
2. (*a*) Continuous pain, alkali-responsive	11	—	—	—	1	—	—	1	—	—	1	6	2	—	2	2	3	4	5	5	1
(*b*) Continuous pain, no relief	33	—	—	—	—	—	1	4	2	—	—	17	9	1	7	11	6	8	12	11	10
3. Unrelated pain	47	2	—	1	1	—	—	4	2	1	1	31	4	2	13	19	5	8	22	8	17
4. Pyrosis only	13	—	—	—	—	—	—	1	—	—	—	8	4	—	1	5	1	6	3	1	9
6. Nausea and vomiting only	20	—	—	—	—	1	—	—	—	—	1	14	4	1	4	8	2	5	8	6	6
Psychiatric Findings:																					
Anxiety state	141	3	—	4	2	—	—	7	4	1	3	94	23	3	43	44	18	33	—	—	—
Other psychopathic states	75	2	1	—	1	—	1	7	3	5	2	36	17	1	11	31	12	20	—	—	—
Normal	142	16	5	2	5	1	4	11	4	2	2	65	25	4	20	48	30	40	—	—	—
Test Meal Findings:																					
Achlorhydria	8	—	—	—	—	—	—	—	—	—	—	8	—	—	—	—	—	—	—	—	—
Hypochlorhydria	74	—	1	1	1	1	—	4	3	3	1	54	5	—	—	—	—	—	—	—	—
Normal	123	8	1	3	3	—	3	8	5	5	1	80	6	—	—	—	—	—	—	—	—
Hyperchlorhydria	60	8	2	1	1	—	—	4	1	—	2	36	5	—	—	—	—	—	—	—	—
Not examined	93	5	2	1	3	—	2	9	2	—	3	17	49	—	—	—	—	—	—	—	—
Total	358	21	6	6	8	1	5	25	11	8	7	195	65	—	—	—	—	—	—	—	—

depends on the high incidence of duodenal ulcer in the group.

The antithesis of this type of pain is the dyskinetic type (group I (*e*)). In this, pain is unrelieved by the taking of food and alkalis, the proportion of cases in which examination by means of a test meal reveals hyperchlorhydria is only a little over a quarter of the preceding group, while the incidence of anxiety states is double. Out of 43 men with this type of pain, radiological examination revealed only two with healed ulcers and two with diseased gall-bladders. The percentage of pylorospasm revealed by examination after an opaque meal was high. The pain occurs when the stomach is full, and the response to treatment of any kind has been universally extremely poor.

The other types of pain, except for the alkali-responsive type which has affinities with the hyperchlorhydric type, in symptom type and general associations either fall naturally in with the dyskinetic type or else form types combining characters of both groups. Type I (*d*) is particularly interesting in the light of the significance placed upon it by Gill and his colleagues.

The inference which it is proposed to draw from the foregoing data is that there would appear to be at least two mechanisms concerned in the production of dyspeptic pain; these may be provisionally referred to as "hyperchlorhydric" and "dyskinetic" pain. They are represented in pure form in the corresponding types of dyspeptic pain, but also occur in mixed or combined forms. Pain of the hyperchlorhydric type is almost certainly gastro-duodenal in origin; in the dyskinetic type, it may be gastro-duodenal, colonic (as suggested by Palmer[3]), biliary, hepatic or even central. In Table II the main features of the various symptom groups are set out, in support of the interpretation proposed.

Pyrosis as a symptom is associated with regurgitation of gastric contents into an irritable œsophagus, sometimes with acid eructations, sometimes with temporary cardiospasm, and with the collection of saliva in the lower part of the œsophagus and its regurgitation, as in waterbrash. Reversed œsophageal peristalsis has been observed.[4] This type of solitary symptom was associated in this series with a low incidence of both organic disease and neurosis.

TABLE II.

Relationships of Symptom Types.

Characteristics of Pain.	Mechanism of Production.						
	"Hyperchlorhydric."	Mixed or Combined.			"Dyskinetic."		
Symptom type	I (*a*): "Hyperchlorhydric."	I (*b*): Alkali-responsive.	I (*c*): Food-responsive.	I (*d*): "Gastritic." (Gill.)	I (*e*): "Dyskinetic."	II: Continuous.	III: Unrelated to Meals.
Type of pain	Post-prandial.	Post-prandial.	Post-prandial.	Post-prandial.	Post-prandial.	Continuous.	Unrelated to food.
Time incidence after meals	1 to 4 hours.	½ to 3 hours.	0 to 3 hours.	0 to 2 hours.	0 to 2 hours.	Nil.	Nil.
Response to treatment	Good.	Good.	Fair.	Poor.	Poor.	Poor.	Poor.
Percentage of patients with organic disease	35	22	16	17	12	2	9
Percentage of patients with hyperchlorhydria	56	21	—	24	15	28	13
Percentage of patients with anxiety states	20	25	42	51	57	39	45
Relief by alkali	Yes.	Yes.	No.	Partial.	No.	No.	No.
Relief by food	Yes.	No.	Yes.	Partial.	No.	No.	No.
Average age of patients (years)	35·3	36·3	31·7	33·5	31·7	33·7	30·5

Treatment by means of a bland diet, avoidance of alcohol and of drinking with meals, and the use of alkaline powders is usually quite satisfactory.

Pain of the duodenal ulcer type has never been satisfactorily explained. It can occur in the absence of ulcer; it is usually, but not invariably, associated with hyperchlorhydria; and it is relieved in dramatic fashion by food. Its most constant association appears to be with pronounced hunger contractions in an empty stomach, and relief is obtained by the distension of the stomach with food or drink, or by neutralization of the contained acid. The pain is not due to the actual acid itself. It may be attributable to the hunger contractions, or to some other gastric spasm, or possibly, as Brun[5] has lately suggested, to ischæmia associated with the last-mentioned factor.

The dyskinetic type of pain appears with a full or partially full stomach, and in contradistinction to the previous type it would seem to be associated with relative hypotonia, reduced peristalsis, lowered acid secretion and excess of mucus (revealed by the fractional test meal examination). Anorexia is severe, and in association with the general depression of gastric function it explains to some degree the dislike of "heavy" food—the tough meat which, with the interruption in the flow of psychic and secondary juice, tends to remain undigested in the stomach, and the fats which normally exercise a depressant effect on both motility and secretion of the stomach. It is notable that much radiologically observed pylorospasm and "irritable duodenum", and clinically observable tender spastic colon, are observed in association with this particular type of syndrome. Any definite statement as to the direct attributability of the pain to pylorospasm, to duodenal spasm, to spasm of the *musculus antri pylorici*, or to colonic or biliary tract dyskinesia (to mention a few of the possible explanations) must, however, be purely conjectural. In a few cases in this group the onset of the dyspepsia was ushered in by attacks of intense, cramping pain in the epigastrium, described as similar in type to the dyspeptic pain which gradually supervenes upon it. No evidence of biliary tract disease could be demonstrated in any of these cases. In some instances the pain came on during a nervous breakdown of anxiety type, and tended to recur with difficult emotional situations. The parallel with the "unhappy colon", to use Hurst's term, is thus fairly exact. The main point to be made here is that the "dyskinetic" type of pain appears to involve quite a different mechanism, and to show quite different physiological associations, from the duodenal ulcer or hyperchlorhydric type of pain.

Clinical Classification.

A satisfactory classification of the dyspepsias is extremely hard to formulate. Duodenal ulceration, certain types of pain characterized by "irritable duodenum", and a number of cases in which exactly similar symptoms are observed, but in which no radiological abnormality can be found, are quite obviously members of one clinical group, and to separate them according to radiological, gastroscopic or psychiatric findings is unsatisfactory.

Classification in psychiatric categories is also of little avail. The presence of an anxiety state in a subject lowers, but by no means abolishes, the possibility of the presence of a duodenal ulcer, and in the case of gastric ulcer, two-thirds of the men with the active type of ulcer and a quarter of those with healed gastric ulcers were observed in this series to be suffering from frank signs and symptoms of anxiety. The gross effects of fear, guilt, fatigue and anxiety on the motility of the gastro-intestinal tract have been repeatedly and amply demonstrated by Beaumont over a hundred years ago and by Cannon, Hurst and Alverez among the latter-day masters. That mental stress plays a considerable part in the production and exacerbation of duodenal ulcer can hardly be denied; the fascinating figures published by Stewart and Winser[6] on the increase of the hospital figures for perforation in London during the "blitz" emphasize this point. It has even been suggested that the particular mental and emotional make-up of the duodenal ulcer patient is so constant as to amount to a diagnostic *sine qua non*. Psychiatric categories, in fact, cut across the clinical classification of dyspepsias, leaving us to such terms as "radiologically and psychiatrically negative" or "functional", to describe dyspeptics.

The same difficulty is arising in respect to gastroscopic classifications. Gill, Berridge and Jones,[1] to whom we owe a most lucid and thoughtful discussion of dyspepsia in the armed forces, found gastritis and gastro-duodenitis in roughly 72% of their cases of dyspepsia unassociated with ulcers, and they even go so far as to correlate these conditions clinically with a type of pain corresponding exactly to the mixed "dyskinetic" type (I (*d*)) previously described here. In the greater part of their gastritic cases of dyspepsia superficial gastritis was found, the gastroscopic picture being characterized by œdema, hyperæmia, submucous hæmorrhage, superficial erosion and a great excess of mucus. In these cases they state that the ætiology is quite obscure, that treatment is unsatisfactory and that the relapse rate is high. They note a high neurosis rate in the 16·5% of their cases classified by them as of non-organic dyspepsia; but they also make the following observation:

> Nearly all dyspeptics are prone to anxiety states, but those with incurable lesions undemonstrable by methods in common use become depressed . . . and being therapeutic failures come to be considered as hopelessly neurotic. These cases need to adhere to diet for symptomatic relief even more than do those who have ulcers. . . . This is impracticable in the army and therefore the problem is likely to remain unsolved.

Their contention is that most so-called functional or non-organic dyspepsias have a definite organic basis in a chronic gastritis, and that the patients' anxiety states are secondary to this for the reason stated.

In the German *Luftwaffe*, Henkel,[2] in the gastroscopic investigation of dyspepsia unassociated with radiological abnormality, found only 31% of stomachs normal. Hartfall[7] found 32% of chronic gastritis among dyspeptics with no radiological abnormality. He also noted, however, that 60% of all cases of dyspepsia, whether ulcers were present or not, were founded on a neurotic basis.

On the other hand, Palmer,[3] discussing the position of chronic gastritis and the disability resulting therefrom in American soldiers, has made the following unequivocal declaration:

> In my judgment, the evidence available at present indicates that the so-called simple, non-specific, superficial, atrophic and hypertrophic forms of chronic gastritis do not produce symptoms and hence do not constitute a cause of disability. Ulcerative gastritis, however, may be associated with an ulcer-like distress, or with massive hæmorrhage, or both, and seems at times, at least, to be related to the lesion peptic ulcer. Patients with this lesion should be included in the group of patients with ulcer, and be treated accordingly.

Palmer points out, first, that no gastroscopic studies of normal persons are available, and quotes a study of 22 stomachs made *post mortem* from the pathological point of view by one of his associates, wherein it was found that of these unselected subjects, all under fifty years of age, pathological examination revealed only four who were completely normal by the ordinary standards and no fewer than 11 in whom clear-cut inflammation with or without atrophy was present. This would suggest that the standards of histological normality of the stomach may have to be reviewed to allow of the possibility that 80% of the population aged under fifty years exhibit chronic gastritis.

Palmer further points out that, though attempts have been made to link gastroscopic findings of chronic gastritis with the presence of symptoms, these have not been convincing. Correlation with any one particular type of symptom has been even less so. In between 40% and 50% of cases of peptic ulcer, for instance, changes of chronic gastritis are found by gastroscopy; but once the ulcer is healed the symptoms disappear, even though the gastroscopic appearances persist unchanged. A similar state of affairs is also found to apply to the dyspepsia complicating the gastric mucosal atrophy of pernicious anæmia. Finally, Palmer makes the point that the symptoms described by dyspeptics in whom gastroscopy reveals abnormalities are

indistinguishable from those described by dyspeptics who present no abnormal gastroscopic appearances. He concludes with the suggestion that these symptoms have nothing to do with the state of the stomach and probably arise in an irritable colon. The same irritable colon also affords a parallel with the gastritic stomach. White and Jones[9] describe the sigmoidoscopic appearances of the colonic mucosa in mucous colitis as varying from the atrophic, with visible veins, to the hypertrophic, with velvety mucosa, hyperæmia, excess of mucus and pin-point ulceration. Even a small experience of sigmoidoscopy serves to confirm these findings and to show also that the relationship between mucosal appearances and symptoms is extremely variable. White and Jones follow the original opinion of Da Costa respecting the psychogenic origin of these colonic disturbances. It is not improbable that a similar ætiology is involved in the production of the changes seen at gastroscopy.

In the present state of our lack of knowledge of the physiological and pathological mechanisms of dyspepsia, it would appear that we are justified in classifying the various types only provisionally, pragmatically and empirically, into clinical, radiological, gastroscopic and psychiatric categories of a purely descriptive nature.

In a series such as this, in which no gastroscopic data are available, the evidence for a psychogenic, emotional or neurotic origin of the disorder in 60% of army dyspeptics, and for similar implications in 100%, is difficult to escape. The parallels with the "unhappy" colon, with effort syndrome, with postural fibrositis and with hyperhidrotic dermatitis appear clear and unequivocal. There are present in each instance the same preponderance of anxious, depressed personalities, the same quasi-imitation of the symptoms and signs of common organic diseases, even to hæmorrhage and ulceration in some cases, the same evidence of general autonomic instability, and finally, the same admited failure of somatically directed therapy.

In this series the final clinical assessments were classified as in Table III.

Most of the points involved in the adoption of this classification have already been discussed; but certain minor points require a little further elucidation.

It must first be stressed that the omission of any diagnosis of chronic gastritis from the classification is dictated by the conviction that, in the present state of our knowledge, this diagnosis can and should be made only by an experienced gastroscopist after careful examination of the patient under standard conditions, or by the pathologist after biopsy or necropsy. Otherwise, it is maintained, nothing but confusion can result. That the gastroscopic investigation of dyspeptics presenting normal radiological findings can and does reveal chronic gastritic changes in 30% to 70% of cases, according to the observer and the standards of diagnosis adopted, is an established fact. The ætiology, pathology, symptomatology and general clinical significance of these changes, however, have not been established. Schindler, for instance, in the examination of chronic alcoholics, 80% of whom had clinical symptoms of chronic alcoholic gastritis, reported that only 45% had gastritic changes; while Gill, Berridge and Jones, as has been previously noted, found that the ætiology was indeterminate, "even more obscure than that of ulceration", and that treatment and prognosis were both equally unsatisfactory. The only mitigating factor, according to them, is regulation of the diet, and this, they conclude, "is impracticable" under army conditions.

As these are precisely the conclusions concerning the dyskinetic and mixed dyskinetic dyspeptic types which have been reached, it can quite fairly be concluded that these factors are indistinguishable in subjects gastroscopically examined on the one hand, and those not so examined on the other, and that no separate group of cases of chronic gastritis can or should be separated on purely clinical grounds, or, in the opinion of the

TABLE III.

Clinical Classifications.

Groups and Subgroups.	Anxiety State.	Other Psychological Abnormality.	Normal.	Total.
Radiological Findings Positive:				
Carcinoma	—	—	—	1 (0·3%)
Duodenal ulcer—				
Active 21	—	—	—	27 (9·25%)
Healed 6				
Gastric ulcer—				
Active 6	—	—	—	14 (4·75%)
Healed 8				
Gall-bladder disease	—	—	—	5 (1·7%)
Functional and anatomical abnormalities—				
Irritable duodenum	—	—	—	25 (8·5%)
Pylorospasm	—	—	—	8 (2·7%)
Altered gastric rugal pattern 11	—	—	—	18 (6·2%)
Miscellaneous 7				
Radiological Findings Negative:				
Dyspeptic:				
Dyspeptic pain—				
Hyperchlorhydric type	3	1	14	18
Mixed types—				
Alkali- and food-responsive	9	2	20	31
"Gastritic" type (Gill *et al.*)	21	12	10	43
Dyskinetic types	28	22	23	73
Pyrosis alone	1	—	7	8
Nausea and vomiting alone	6	4	4	14
Total	68	41	78	187 (63·9%)
Non-dyspeptic	—	—	—	8 (2·7%)
Investigation Incomplete:				
Hyperchlorhydric	1	—	2	3
Mixed—				
Alkali- and food-responsive	3	1	6	10
"Gastritic"	9	5	5	19
Dyskinetic	10	7	8	25
Pyrosis	2	1	1	4
Nausea and vomiting	2	1	1	4
Total	27	15	23	65

radiologists at this hospital, from the radiological appearance of the gastric rugæ.

The diagnosis of "irritable duodenum" was made in this series with a picture of spasticity or hypermotility of the duodenal cap without positive evidence of ulcer. No attempt has been made to diagnose duodenitis from alteration in duodenal mucosa patterns in the manner described by Gill, Berridge and Jones. The symptoms associated with this appearance in this series of cases have varied considerably; out of 25 patients, four had the typical duodenal ulcer type of dyspepsia, and fell clinically into the "duodenal ulcer" class, and the equal proportions of the remainder had dyspepsia of dyskinetic or mixed type. A large proportion of the last-mentioned had tender spastic colons, and the neurosis incidence was high. From a clinical point of view, this appearance would thus seem to be of no specific ætiology, and to diagnose duodenal ulcer as a routine in every case in which duodenal irritability was present would appear clinically incorrect and damaging to the interests of the patient.

Pronounced pylorospasm as an isolated radiological feature occurred in eight cases in this series. The symptom types were half dyskinetic and half mixed. Autonomic instability and a tender, spastic colon were common accompanying features.

The diagnosis of anxiety state or autonomic instability refers to the existence of pronounced and persistent tachycardia, labile blood pressure, tremor of fingers, tongue and eyelids, excessive axillary and palmar sweating, depression, headache, dyspnœa of "effort syndrome" type, and numerous other symptoms which accompany and complete the picture. Other psychiatric abnormalities included mental deficiency, depressive states and borderline schizophrenic manifestations.

Comparisons with Other Records.

Examination of the available published figures on dyspepsia in the services reveals interesting variations from the conclusions reached in this series. Some published classifications are shown in Table IV.

The striking disparity in the incidence of peptic ulcer is the first matter of note. The values which most resemble the present series are those of Henkel, derived from 1,400 German air force personnel in Münich. He, however, apparently includes all duodenal abnormalities as ulcers. Brockbank states that duodenitis and duodenal irritation are classed as ulcers in his series for the purposes of military medical "boarding". This, however, does not explain the entire discrepancy. Two groups of workers, Urquhart, Singleton and Feasby from a Canadian hospital, and Gill, Berridge and Jones, have both carefully distinguished between duodenal ulceration and irritability, and have laid down a standard for diagnosis of ulcer, which necessitates visualization of a niche; this standard has been used in this series.

Another factor, however, is apparently involved—namely, the amount of neurotic material included in each series. In Tidy's series, in only 45% of cases was no radiological abnormality found, and the corresponding totals of 52% to 57% (other British workers), 62% (Henkel), and 66% in this present series offer an indication that this factor has operated fairly generally.

From a practical and particularly from a military point of view this is right and inevitable, but it may seriously be questioned whether, in any examination of the ætiology and symptomatology of cases of dyspepsia as a whole, it can be considered entirely correct.

To sum up, the disparity in the incidence both of peptic ulcers and of frank neurosis in the various figures quoted from British, Canadian and German sources can be attributed to the fact that in this series cases of frank neurosis associated with dyspeptic symptoms were included, while cases with a doubtful diagnosis of ulceration were excluded, and finally, that there may be in Australian soldiers a low incidence of peptic ulcer, comparable with that which obtains in the figures quoted by Henkel for Germans.

The Dyspeptic Soldier.

Dyspepsia in soldiers occasions a great deal of difficulty in postings to duty, and is a source of considerable wastage.

Diagnostically, a great deal, but not all, can be determined by the taking of a careful history and thorough clinical examination, together with a rough psychiatric summing-up. This last must in no circumstances be considered beyond the capacity of the average regimental medical officer—in fact, it is his responsibility and duty to recognize mental deficiency and anxiety, depressive and other abnormal mental and emotional states, and by precept, instruction and example in "man-management" to make the best possible use of the services of men so affected. The neurotic soldier is not, *ipso facto*, abnormal, and to regard him automatically as useless, hypochondriacal and a somewhat contemptible nuisance is therapeutically stupid. Hardly less damaging is it to pamper him, or to pin upon him a doubtful or wrong diagnosis of organic disease. His disability must be recognized as emotional and his handling as a problem and a challenge to the ingenuity of his officers. The neurotic with dyspeptic symptoms—and this in Hartfall's opinion, borne out by the experience of this series, includes 60% of all types—is no exception to this general statement.

The clinical history and the response to simple treatment enable a rough clinical division of dyspeptics to be made into the categories previously described here. Among the hyperchlorhydric or duodenal ulcer types of case will be found usually a good type of man, often keen, over-

TABLE IV.

Published Figures of Dyspepsia Incidence.

Source of Figures.	Authority.						
	Tidy.[9]	Hutchison.[10]	Brockbank.[11]	Urquhart.[13]	Gill.[1]	Henkel.[12]	Present Survey.
Percentage of admissions to hospital ..	—	—	8·5	4·0	—	—	5·9
Percentage of medical admissions to hospital	20·0	—	—	—	—	—	—
Positive Radiological Findings:							
Duodenal ulcer	32·5	34·1	29·7	34·9	24·0	—	—
Active	—	—	—	—	—	13·5	7·2
Healed	—	—	—	—	—	14·0	2·1
Gastric ulcer	19·4	11·4	11·9	1·5	5·0	5·7	4·7
Other organic lesions	3·4	1·1	0·9	—	—	4·3	2·0
Duodenitis and irritable duodenum ..	—	—	—	7·2	16·0	—	8·5
Miscellaneous functional disorders ..	—	—	—	—	—	—	9·0
Negative Radiological Findings:							
Gastritis (chronic)—							
Gastroscopic	—	—	—	—	31·0	43·1	—
Clinical	35·0	6·9	—	—	—	—	—
"Functional" dyspepsia	—	28·4	57·5	50·5	16·0	19·5	26·6
Neurosis	—	5·7	—	1·6	—	—	37·2
Hypochlorhydria and hyperchlorhydria	—	3·4	—	—	—	—	—
Miscellaneous	9·7	9·0	—	0·3	7·0	—	2·7

conscientious and eager to serve. Provided his supplies of alkali can be maintained, he can often, especially if he is an officer or a non-commissioned officer, carry on quite well for a time. However, 25% of men with this type of dyspepsia are found to have duodenal ulcers on X-ray examination, and in deciding to retain and nurse along a good man in the unit, the risks of possible perforation of the ulcer and hæmorrhage must be taken into consideration. Without undue minimizing of these risks, however, it can be noted that during the six-month period during which 422 chronic dyspeptics were admitted to this hospital, less than a dozen suffering from perforation and gross hæmatemesis were admitted, and of these two-thirds had had no previous dyspeptic symptoms.

For practical purposes, with the "duodenal ulcer" type of dyspeptics can be included the men with simple heartburn, among whom in this series there was a very low incidence of neurosis and organic disease, and the alkali-responsive type. All these people are usually quite easy to keep symptom-free or approximately so, and are satisfactory to deal with.

The pure dyskinetic types of dyspepsia are also easily recognized. Here there is a high percentage of neurosis. The administration of alkalis and any other form of treatment have no effect on either symptoms or attendance at sick parade. Army diet—the stews, the meat, the grease—are sources of continual complaint, and in point of fact, the only thing which relieves symptoms in this type of dyspepsia is the soldier's own prescription of "light" diet, preferably cooked and served by his wife or mother. This, in the phrase of Gill and his colleagues, "is impracticable".

In this type of case, however, the chances of the existence of an organic lesion, even in the presence of much loss of weight and vomiting, are about 1 in 40, compared with 1 in 4 in the duodenal ulcer type, and 1 in 10 in the mixed or "gastritic" types. The future in the army of a man with a pure dyskinetic type of dyspepsia depends on the man himself, on his intelligence, his keenness, his adaptability, and on the presence of absence of anxiety or other psychopathic factor. He should be given a long and conscientious trial in the unit before a decision is made to send him to hospital. Men of this type do very little better after reclassification to a lower grade, whereas, with good "man-management" on the part of medical and combatant officers, a proportion will carry on usefully, if not altogether uncomplainingly, even in a Class 1 category.

The remaining type of pain, the mixed "gastritic" type of Gill, Berridge and Jones, conforms to the dyskinetic type in the difficulty of relieving symptoms and managing the man to the best advantage. It is important to remember that many men with gastric ulcer complain of this type of symptom, and that these very men may appear the most typically "neurotic". The question of whether these men have a gastroscopically proved chronic gastritis or not is of no importance from the practical point of view of handling, treatment and disposal.

The only remaining types of dyspepsia of importance are those associated with persistent nausea and vomiting, and those associated with hæmatemesis or melena. Young men with persistent nausea and vomiting are usually hysterical, and their treatment, future usefulness and disposal depend on this psychiatric factor. With regard to older men, the question of possible malignant disease must be carefully considered.

Men with stories of hæmatemesis or melena should be most carefully considered, and the dejecta always suspected. It is amazing how often a hæmatemesis proves to be attributable to the presence of beetroot, and so-called melena to the small, dark stools of a spastic colon or to constipation with a little surface blood derived from hæmorrhoids. Men who have had small hæmatemeses, and a surprisingly large proportion of those who have had gross hæmatemeses, show no signs of ulcer when examined radiologically; the hæmatemeses in all probability are due to erosive gastritis.

Acute gastritis or gastro-enteritis, whether due to infection, to alcohol or to dietetic indiscretion, should, of course, never be classed as dyspeptic.

To sum up, as far as clinical diagnosis is concerned, peptic ulcer can be accompanied by almost any type of dyspeptic pain, and in case of doubt recourse must be had to admission of the patients to hospital and complete investigation. Vomiting and loss of weight are no criterion of the organic origin of the complaint. The type of clinical history, however, definitely alters the likelihood of the presence of organic disease, and it is bad practice to send automatically to hospital, without careful weighing of the possibilities and probabilities, every man who complains of indigestion, of vomiting blood in small quantities, or of passing "black motions". Tidy, in this respect, has pointed out that "if a man is sent twice to hospital with the same complaint, he is unlikely to develop into a useful soldier".

From a prophylactic point of view, the highest possible standard of catering and cooking should be maintained in units. The main complaints voiced by dyspeptics in criticism of army food are the large amounts of red meat, the poorness of the cooking and the excess of fat—always referred to by the dyspeptic as "grease". These together often combine to remove effectually what little appetite may have been present at the meal hour. That the very smell of roast beef causes anorexia and nausea is a relatively common complaint. It is possible that troops in non-operational areas are overfed in some respects. Reports from battle zones indicate that, where fighting is in progress and rations are less and their arrival more precarious, complaints of dyspepsia are few.

Important also from the prophylactic point of view is the fact that food eaten under conditions of mental strain or fatigue, or without natural appetite, is likely to increase the dyspeptic's difficulties. Food which would be appetizing in Victoria in the winter may obviously prove a weariness to the flesh in Darwin in the summer.

The obvious step of ensuring dental fitness needs only to be mentioned.

When the dyspeptic soldier reaches hospital, he should be as completely investigated as practicable in the shortest possible time. If he is found to have an organic lesion, he should be "boarded" and discharged from the army. Experience in the British Army has proved that the return to duty of a man with proved peptic ulcer, except under special conditions and in very rare cases, is unprofitable.

The dyspeptic soldier with no radiologically evident abnormality should, as a rule, be returned to his unit as soon as organic disease has been excluded, and preferably reassured to this effect. When obvious gross psychopathic disability exists, or when a later admission to hospital reveals that the man is not going to be satisfactory, "boarding" to a lower grade is indicated, although, except in those cases in which the man can be posted so that he can obtain special diet, his service is as likely to be unsatisfactory in a "B" class capacity as it was in "A" class.

With regard to the question of gastroscopy, the present position is that the treatment, management, prognosis and disposal of the majority of patients suffering from dyspepsia unassociated with radiologically evident lesions, gastroscopic examination of whose stomachs reveals an abnormal condition, from a practical point of view differ in no significant respect from those who have no gastroscopically evident abnormalities. This does not imply that gastroscopic examination should be neglected when it is possible. The sooner that the full range and limitations of this new and valuable procedure are standardized, the better. Even, however, if it could be proved that the presence of chronic gastritis constituted a source of symptoms and of disability—and this Palmer for one has denied—it would still remain in doubt whether such possible discomfort and disability were sufficient in themselves to prevent a man from being returned to full duty. Alexis St. Martin had no symptoms, even when Beaumont[6] observed pronounced superficial gastritis.

In the cases of gastritis associated with ulceration and possibly with hæmatemesis, the final criterion of fitness for duty must obviously be based on general clinical grounds rather than on gastroscopic appearances.

The question of the psychiatric implications in the dyspepsias has already been discussed to some extent. Certain types of neurosis and psychopathy, gross mental deficiencies and severe anxiety states of long standing, for instance, obviously unfit men for any form of army service. Men with milder grades of these disorders, however, can and should be useful troops if properly handled. The disposal and posting of a neurotic or psychopath suffering from dyspepsia with no radiological abnormalities should, therefore, be decided on his capacity to serve as an individual, and no special significance should be attached to his dyspeptic symptoms.

Experience at this hospital is that the "dyskinetic" and "gastritic" types of dyspepsia are not improved by hospital treatment, or that any improvement is largely temporary. It is a curious and unfortunate anomaly that the better the type of personality, and the more prompt and complete a patient's response to treatment, the more likely he is to be suffering from peptic ulcer.

General and Theoretical Considerations.

The question may well be raised here as to whether this attitude of therapeutic nihilism in respect of the dyskinetic dyspeptic types is entirely justified.

On the classification adopted here—that is, including frank neurosis—one can guarantee to render symptom-free only some 30% of dyspeptics, namely, those with dyspepsia of the "hyperchlorhydric" and "alkali-responsive" types. In the other types, such measures as dental attention, reassurance, and the exhibition of such drugs as phenobarbital, ephedrine, "Benzedrine" and hydrochloric acid have a disappointingly small field of efficacy. For a small group of men of good type with pronounced weight loss and anorexia, the use of insulin (sub-coma dosage) and psychotherapy has, in the hands of Major H. B. Stephens at this hospital, given brilliant results. These, however, are exceptional.

In a very large number of dyspeptics there is evidence of emotional instability and discord, evidenced mainly in the form of general sympathetic hyperactivity, or rather hypovagotonia, possible bases for which have been discussed elsewhere.[11] This applies not only to dyspeptics, but also to a large number of patients admitted to military hospitals with diagnoses of cardiac disease, effort syndrome, thyreotoxicosis, fibrositis, dermatitis and debility, as well as frank neurasthenia, anxiety states, mental deficiency and other psychopathic conditions.

During the last war some good results in the treatment of effort syndrome were obtained by keen medical officers, who, under the mistaken impression that the symptoms were due to flabby or strained heart, proceeded to treat the patients with graduated physical training. The effect of this treatment on the patients was to give them two things—confidence, and a relative athlete's bradycardia and hypervagotonia. Twenty-five years later we are wiser to the extent that we have determined the emotional source of these disabilities, but infinitely more foolish in that we attempt no cure. In isolated instances, notably in South Africa, special training camps for the physical and mental improvement of poorer types of men have been outstandingly successful. Some similar scheme, it is firmly believed, would reclaim as useful soldiers some 40% to 50%, not only of dyspeptics, but of the mass of chronic inhabitants of military medical wards. Even if it is eventually determined that peptic ulcer and chronic gastritis occur on a completely organic basis of infection or trauma or allergy, as seems at the moment unlikely, it would be absurd to deny that an emotionally stable, well-trained patient could not better cope with such a disability and its attendant symptoms than a flabby, depressed neurotic.

To sum up, in the production of dyspeptic pain two main distinct mechanisms appear to be involved, with corresponding symptom patterns and alterations in observable physiology. The factors that initiate and maintain these mechanisms are obscure. Distressing emotion has been observed both clinically and in controlled physiological experiment grossly to affect both secretory and motor activities of the gastro-intestinal tract, and chronic emotional disturbance is present in a large percentage of chronic dyspeptics. Inflammatory, neoplasitc or other pathological changes in the gastric or duodenal walls, in other abdominal organs and in the thoracic viscera, may be causal factors in some instances. Chemical, thermal and mechanical trauma to the gastric wall, with or without secondary infection, has been postulated to play a part, on, it would appear, purely theoretical grounds.

Peptic ulceration of the gastric or duodenal wall may represent a cause of dyspeptic symptoms; on the other hand, it may represent an end-result of the dyspepsia-producing mechanisms. The same applies to whatever fraction of the changes observed gastroscopically in chronic gastritis may ultimately prove to be pathological in the strict sense of the term.

To express a purely personal opinion, the balance of evidence appears at the moment to indicate that the fundamental basis of most dyspepsia is psychic. Not only does emotion produce bodily change, but emotion is, according to the doctrine of James and Lange, the perception in consciousness of biologically purposive visceral changes reflexly produced through the hypothalamic-autonomic effector nervous pathway. In certain subjects, it is considered, prolonged emotion of unpleasant character may, on the one hand, be falsely interpreted as a symptom of organic disease; on the other hand, it may directly or indirectly produce peptic ulceration, chronic gastritis and other observable organic changes found in dyspepsia—directly, by maintaining over a sufficiently long period alterations in motility, secretion and blood supply (whether in the direction of hyperæmia or of ischæmia) of the gastro-intestinal tract, indirectly, by lowering local resistance to trauma, hydrochloric acid, infection and so on.

Such chronic emotional states may and do arise normally in all persons in the daily struggle for existence; they are more likely to arise in the emotionally unstable or in persons of low intelligence. They may take the form of depression and anxiety, or of a tense, apprehensive or irritable alertness, according to the constitutional type of the subject and the nature of the difficulties encountered, and it seems probable that these factors influence the type of dyspepsia. The tense, alert, intelligent, conscientious fellow develops a hyperchlorhydric dyspepsia which may go on to duodenal ulcer; the depressed, anxious, asthenic subject has symptoms of the "dyskinetic" type.

Apart from the normal day-to-day emotional strain of life, it also seems possible that chronic anxiety may be fixed and perpetuated by a mechanism of "analyser breakdown", which has been demonstrated by Pavlov in dogs, and by Liddell and others in pigs, sheep, goats and mice.

Civilization in general, and possibly army service in particular, would seem by comparable methods to be producing comparable states in the less gifted or less adaptable tenth of human beings. What we are seeing on the fluorescent screen or through the eyepiece of the gastroscope may well prove to be evidence of disease, not of an individual patient, but of the body of civilized society. In such an event, as Cannon wrote, "an escape from the demands of the pathologist for morphological evidence of disease, and also from the vagueness and mysticism of the psychological healers, can be found . . . in an understanding of the physiological processes which accompany profound emotional experience".

Such a conception of the mechanism of the production of dyspeptic states would allow a classification of dyspepsias as follows:

Organic Gastric Disease:
- Carcinoma and other neoplasms.
- Pyæmic and specific infections.
- Metabolic and general disorders.

Reflex Dyspepsia:
- Hypothalamic and cerebral disease.
- Disease of other bodily organs.

Psychogenic Dyspepsia:
- Peptic ulcer.
- Chronic gastritis.
- Functional, non-organic dyspepsias of hyperchlorhydric, "dyskinetic" or "mixed" types

Here it must be firmly stressed that such a classification in no way whatever implies that all dyspeptics are "neurotic" in the common sense of the word; this would be as foolish as to maintain that all neurotics are dyspeptics. The only implication is that, the viscera being the "sounding-board of the emotions", prolonged distressing emotion, whether due to external circumstances or to neurosis or psychosis, must be incriminated as the most evident, common and logical source of dyspeptic disorders. The concept that organic changes may be produced by chronic emotional causes in subjects with a vulnerable, normal physiological make-up is almost impossible to refute, in the light of the modern work of Flanders Dunbar[15] and others. One may even go further and state that there is sufficient basis in the observations of Pavlov, Cannon, Liddell and Flanders Dunbar to establish chronic distressing emotion as a primary or contributing physiological cause of disease as significant and as organic as bacterial infection or neoplastic change.

Conclusion.

The practical implication of this proposition from a military point of view is obvious. Although two-thirds of dyspeptics in the army develop their symptoms prior to enlistment, prophylaxis and mitigation of established disability depend to a large extent on expert "man-management", and on the physical and mental building up of the vulnerable types to such a stage of fitness, keenness and "happiness in the service" that symptoms either disappear or are voluntarily minimized. A secondary effect would be the elimination from the wards of military hospitals and from convalescent depots of cases of "borderline organic disease" and "borderline neurosis", which at present are all too numerous and all too refractory to treatment.

Summary.

An analysis is made of the symptoms occurring among 358 soldiers with dyspepsia admitted to a base military hospital, and related to X-ray, pathological and psychiatric findings. Two types of dyspeptic pain with apparently differing physiological mechanisms are distinguished. Figures from other sources are compared. Recommendations are made as to the handling of dyspeptics in units and in general hospitals.

Acknowledgements.

My thanks are due to the Director-General of Medical Services for permission to publish this paper.

Among the many members of the staff of this hospital who worked in gathering the material for this report, thanks are especially due to Major H. B. Stephens, of the psychiatric department, who personally undertook the psychiatric assessment of the great majority of the cases, and to Major Praagst and Captain T. Dawes, of the radiological department, for their help and cooperation.

References.

(1) A. M. Gill, F. R. Berridge and R. A. Jones: "Differential Diagnosis of Dyspepsia: Analysis of 217 Service Cases", *The Lancet*, June 20, 1942, page 727.
(2) W. L. Palmer: "Stomach and Military Service", *The Journal of the American Medical Association*, Volume CXIX, August 8, 1942, page 1155.
(3) A. Hurst: *Proceedings of the Royal Society of Medicine*, Volume XXXIV, Number 7, May, 1941, page 411.
(4) *The Lancet*, March 21, 1942, page 362.
(5) *The Lancet*, June 13, 1942, page 710.
(6) D. N. Stewart and D. M. de R. Winser: "Incidence of Perforated Peptic Ulcer: Effect of Heavy Air Raids", *The Lancet*, February 28, 1942, page 259.
(7) S. J. Hartfall: *Proceedings of the Royal Society of Medicine*, Volume XXXIV, Number 7, May, 1941, page 411.
(8) B. V. White and C. M. Jones: "Mucous Colitis: Delineation of Syndrome with Certain Observations on its Mechanism and on Role of Emotional Tension as Precipitating Factor", *Annals of Internal Medicine*, November, 1940, page 854.
(9) H. L. Tidy: "Dyspepsia in the Forces", *Proceedings of the Royal Society of Medicine*, Volume XXXIV, Number 7, May, 1941, page 411.
(10) J. H. Hutchison: "Incidence of Dyspepsia in Military Hospital", *British Medical Journal*, July 19, 1941.
(11) W. Brockbank: "Dyspeptic Soldier: Record of 931 Consecutive Cases", *The Lancet*, January 10, 1942, page 39.
(12) R. W. I. Urquhart, A. C. Singleton and W. R. Feasby: "Peptic Ulcer Problem", *The Canadian Medical Association Journal*, November, 1941, page 391. (*Bulletin of War Medicine*, Volume XI, May, 1942, page 401.)
(13) Henkel: *Bulletin of War Medicine*, Volume III, Number 4, December, 1942, page 219.
(14) H. R. Love: "Neurotic Casualties in the Field", THE MEDICAL JOURNAL OF AUSTRALIA, August 22, 1942, page 137.
(15) F. Dunbar: "Emotions and Bodily Changes: Report of Some Recent Psychosomatic Studies", *Annals of Internal Medicine*, Volume XIV, November, 1940, page 839.
(16) Beaumont: "Experiments and Observations on the Gastric Juice, Etc.", 1838.

Reports of Cases.

A FATAL BLOOD TRANSFUSION REACTION APPARENTLY DUE TO THE RH FACTOR.

By NOEL C. NEWTON AND A. H. TEBBUTT,
From the Pathological Department, Saint Vincent's Hospital, Sydney.

Clinical Record.

A MARRIED woman, aged forty-eight years, a *multipara*, was admitted to hospital in March, 1943, with a history of uterine hæmorrhage; the hæmorrhage had begun thirteen weeks previously, continued for five weeks and ceased during three weeks, and had then recurred and continued for a further five weeks, when she was admitted to hospital. She had become exceedingly weak.

Examination showed the uterus to be of normal size, and a diagnosis of *metropathia hæmorrhagica* was made by the honorary gynæcologist. A blood count disclosed severe hypochromic anæmia; the red cells numbered 1,120,000 per cubic millimetre, the hæmoglobin value was 14% (1·9 grammes), and the colour index was 0·57. A blood transfusion was given on the second day; 900 cubic centimetres of blood and 200 cubic centimetres of sodium citrate solution were given; the blood was from two donors of group A, the patient belonging to the same group. Cross-matching tests between the serum of the patient and the corpuscles of the donors revealed no agglutination.

Approximately one hour afterwards she had a rigor, which lasted only a few minutes. The uterine bleeding was controlled by packing and ceased four days later. Her condition improved, and ten days after the transfusion a blood count showed that the red cells numbered 2,100,000 per cubic millimetre, the hæmoglobin value was 28% (3·86 grammes), and the colour index was 0·62.

On the following day—that is, eleven days after the first transfusion—she was given a further transfusion of 900 cubic centimetres of blood and 200 cubic centimetres of citrate solution; two other donors of group A were used, and no agglutination was noted in the cross-matching tests. From what follows it seems almost certain that, as the slide method was used, an Rh agglutination was missed with one or both of these donors' corpuscle suspensions. The slide method is unsatisfactory for Rh agglutination.

About six hours later the patient suffered from nausea and headache and then began to vomit. Next morning her temperature was 102° F. and she was jaundiced. The serum gave a strong indirect reaction to the Van den Bergh test. The jaundice soon disappeared, but ominous and severe oliguria began immediately after this transfusion. During the first twenty-four hours the volume of urine passed was only about 20 cubic centimetres; then on successive days it was two, three, four, six, seven, eight, three, six and fifteen ounces. The urine appeared normal to the naked eye. Microscopic examination of the urine on several occasions revealed no more serious abnormality than the presence of many epithelial cells, some few red cells, a few leucocytes and a few red cell casts. The urea content was estimated almost every day, and it never exceeded 0·6%. The blood urea content on the second day was estimated as 67 milligrammes *per centum*; it rose slowly to 120 milligrammes *per centum* on the seventh day and to 135 milligrammes *per centum* on the eighth day, and then on the eleventh day (the day prior to death) it was only 120 milligrammes *per centum*. It was not estimated on the last day.

The treatment consisted of intravenous infusions of various fluids with a view to promoting secretion of urine and alkalization; the fluids used were glucose-saline solution, sodium citrate solution and sodium sulphate solution, but

they had little effect, though for several days it seemed possible that secretion of urine would eventually be restored. On the twelfth day she became restless, confused, had generalized twitching fits and died within two hours of the first fit.

Post-Mortem Examination.

Autopsy revealed pronounced general œdema of the subcutaneous tissues; fluid was also present in both pleural cavities. The right auricle was greatly distended with fluid blood, and the other chambers of the heart and great vessels all contained fluid blood. There were neither red nor grey clots. Both kidneys were swollen, each weighing approximately ten ounces. The cortex was rather soft and friable and of a greyish-yellow colour. When the capsule was stripped off, portions of cortex came away. There was some congestion of the medulla. No abnormality was found in the pelves and ureters. A scraping was made with a scalpel from the freshly cut surface of the cortex and examined microscopically under a coverslip. Only a few casts were to be seen, partly red cell casts and partly granular casts. Most tubules were empty. Examination of paraffin sections disclosed pale, somewhat shrunken glomeruli. The convoluted tubules had an ample lumen and rather small cubical cells. A few tubules contained yellowish amorphous matter suggesting red cell or blood pigment debris, and a few contained red cells. Certainly there was no evidence of widespread plugging of tubules with blood pigment derivatives. A few of the straight tubules contained desquamated cells. There were collections of small round cells here and there in cortex and medulla.

The liver weighed 59 ounces, and was somewhat congested. Intracellular pigment was found in only a few of the liver cells, and slight vacuolar degeneration was present. The spleen weighed only six ounces. Staining with Perl's stain revealed no increase of iron-containing pigment in the spleen, and the debris in the tubules of the kidney gave no reaction.

Discussion.

Before the death of the patient the cause of the transfusion reaction was investigated. It appeared likely that one of two things had happened: either (i) the second lot of blood given by transfusion was incompatible under the ABO system, or (ii) it was incompatible owing to the development of immune serum following the first transfusion, and the best known in this connexion is anti-Rh serum. The first possibility was excluded by again typing the blood of both donors and of the patient and by cross-matching tests carried out by the usual slide method at room temperature. As regards the second possibility, we had no anti-Rh serum and were not aware that it was available in Sydney. Nevertheless, as 85% of people are said to be "Rh positive"—that is to say, their red cells contain the Rh agglutinogen—the serum of the patient, undiluted and diluted one in two, was mixed with red cells from two persons belonging to blood group O. The tests were made in agglutination tubes in a water bath at 37° C., and readings were made macroscopically and microscopically after two hours. Both sets of corpuscles were agglutinated by both the undiluted and the diluted serum.

We then learned that Major R. J. Walsh and Dr. E. Beatrix Durie had some anti-Rh serum. The former found that the patient's red cells were "Rh negative", and that the agglutinin we had found in her serum was anti-Rh and had a titre of one in eight. With Dr. Durie's anti-Rh serum (group O), we found that the red cells of five persons belonging to blood group O were agglutinated (all "Rh positive"), and that these same sets of corpuscles were agglutinated by our patient's serum (group A).

Commentary.

1. The story may probably be reconstructed as follows. The patient had had four children, the youngest fourteen years old, and one miscarriage at six weeks. She was "Rh negative", but there was no history of severe icterus or congenital anæmia in the offspring. Nevertheless, it is possible, if her husband was "Rh positive", that she was to some degree sensitized to the Rh factor. However this may be, the production of anti-Rh agglutinin may be attributed to the assumption that one or both of the first blood donors used was "Rh positive", and the reaction following the second transfusion was apparently due to the assumption that one or both of the second donors also was "Rh positive". In the United States of America 85% of people are said to be "Rh positive". None of the donors could be located for confirmation of the assumption that several of them were "Rh positive".

2. The true cause of the severe oliguria is obscure. Hæmolysis appears not to have been severe. We quote Wiener[1] on this subject:

> The exact mechanism responsible for the symptoms of hæmolytic reactions is not entirely understood. Renal insufficiency has been ascribed to toxic substances derived from the hæmolysed blood. According to Baker and Dodds[2] hæmolysed blood is excreted by the kidneys and the hæmoglobin is precipitated in the acid urine as acid hæmatin, obstructing the tubules and causing anuria.

Wiener reproduces a photomicrograph of a section of a kidney with pigmented granular masses obstructing the collecting tubules. We do not confirm that finding in our case, in which there seems to be no mechanical explanation for the oliguria. It seems rather that the secretion of urine was in some way greatly depressed as a result of the transfusion reaction. Even with a greatly diminished urinary flow, the urea concentration factor was only between five and ten.

3. Treatment along orthodox lines as described by Wiener[1] was unsuccessful. This treatment seems to aim at diuresis and the prevention of precipitation of acid hæmatin. To quote Wiener again:

> Intravenous injections of dextrose and saline solutions may be beneficial. In a case reported by Bancroft, decapsulation of the kidneys was performed when the patient's condition seemed desperate, and this was followed by marked diuresis and gradual recovery. In another case recovery was seen after treatment by venesection. Treatment with alkalies has been advocated by Baker and Dodds based upon their concept of the pathogenesis of the condition.

Wiener also writes that "once a typical hæmolytic reaction with uræmia sets in, the prognosis is grave". In a series of 17 cases, mostly compiled from the literature, 11 patients died. It must be conceded, therefore, that treatment has been generally unsuccessful.

Acknowledgements.

We wish to acknowledge our indebtedness to Dame Constance D'Arcy and to Dr. Richmond Jeremy for permission to make use of the clinical record, and to Major R. J. Walsh and Dr. Beatrix Durie for assistance with anti-Rh serum.

References.

(1) A. S. Wiener: "Blood Groups and Blood Transfusions", Second Edition, 1939, page 99 *et sequentes*.

(2) S. L. Baker and E. C. Dodds: "Obstruction of the Renal Tubules during the Excretion of Hæmoglobin", *The British Journal of Experimental Pathology*, Volume VI, 1925, page 247.

Reviews.

OPHTHALMIC NURSING.

THE third edition of Maurice Whiting's book on ophthalmic nursing adds a few points to the earlier editions, particularly on the subjects of sulphonamide therapy and gas burns of the conjunctiva and globe.[1]

Presumably such works as this are of value to nurses or they would not continue to be issued; but in our opinion such a book is of more use to those lecturing to nurses than to the nurses themselves.

Every training hospital has its own lecturer for nurses in various subjects, and the nurses are taught according to the views of the lecturer. To the lecturer who has no strongly held policies of his own, such a book as this may be of value; but for nurses themselves there is too much detail about ophthalmic operations and the diagnosis of eye diseases and not enough emphasis upon actual nursing.

However, in spite of these criticisms of the layout of the book, it contains a great deal of information and should be valuable to nurses as a work of reference.

[1] "Ophthalmic Nursing", by M. H. Whiting, O.B.E., M.A., M.B., B.Ch., F.R.C.S., with an introduction by Sir John Parsons, C.B.E., D.Sc., F.R.S.C., F.R.S.; Third Edition; 1941. London: J. and A. Churchill Limited. Crown 8vo, pp. 171, with 54 illustrations. Price: 6s. net.

The Medical Journal of Australia

SATURDAY, AUGUST 7, 1943.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

SOCIAL SECURITY AND MEDICAL PRACTICE IN CANADA.

THE Dominion of Canada, like the Commonwealth of Australia, has been much concerned with social security for the future, and as incidental to that question, with the medical care of the people of Canada. Most people know what is meant by the term social security which was so well summed up in the Atlantic Charter as freedom from fear and freedom from want. The needs of one country are much the same as those of another, and the proposals of one country to secure the national health do not differ widely from those originating in another. Variations may arise from differences of environment or be dependent on differences in national temperament. Be that as it may in regard to Canada and Australia, it will be of interest to Australian doctors to learn how the profession in Canada is trying to meet the situation and it may be useful to them in their own planning. An account of the activities of the Canadian Government in regard to social security and of its planning for national health insurance has been given in the *International Labour Review* for May, 1943, and the reaction of the Canadian Medical Association to these activities is described in three recent numbers of *The Canadian Medical Association Journal*. The issue for September, 1942, contains the report of the Executive Committee presented at the annual meeting in June, 1942; the issue of February, 1943, contains an announcement of policy of the Association and the issue of May, 1943, a statement presented by the General Secretary to the Special Committee on Social Security of the Canadian House of Commons.

On March 8, 1943, the Canadian House of Commons appointed a special committee, representing all parties, to examine and report on a national plan of social insurance which would constitute a charter of social security for the whole of Canada. Among the documents which the Special Committee is considering are two—a report on social security prepared for the Prime Minister's Advisory Committee on Reconstruction by Dr. L. C. Marsh, and a report containing the draft of Dominion and provincial bills to establish universal health insurance and improved public health services drawn up by the Advisory Committee on Health Insurance. Dr. Marsh's report is analysed in the *International Labour Review*. In the introductory section there is an interesting discussion on social insurance and social assistance. It is pointed out that social insurance benefits must be less than the earnings of the self-supporting individual, while social assistance payments must be less than the earnings of an unskilled worker. Minimum wages are discussed and it is stated that "the proper approach to intolerably low wages, and easily the most desirable in the long run, is to raise the efficiency of the worker himself; either by improving his training, education or skill, or—a remedy whose importance is frequently forgotten—by placing him in an environment in which his efficiency will be improved". The suggestions put forward in the report are gathered together and arranged so as to constitute a comprehensive system of social security. There are six main divisions.

1. The national investment programme for the promotion of employment; placement and training facilities; subsidiary employment projects and unemployment assistance. These operations and services would be financed by general taxation and administered under Dominion direction with provincial co-operation.

2. Children's allowances, financed by general taxation and administered by the Dominion. . . .

3. Health insurance providing medical care. This scheme would be compulsory for all single adults and heads of families, and would be financed by their contributions and Dominion and provincial subsidies, and administered by the provinces subject to Dominion standards. The contribution of the head of the family would ensure medical care for his wife and children. The contribution would be the same for a family as for a single person, but would vary with the income of the contributor. Thus persons with an income of $2,000 a year or more would pay a contribution equal to the premium required to cover the cost of medical care for an average family, and persons with smaller incomes would pay proportionately smaller contributions, the difference between their contribution and the premium being made up by the Dominion-provincial subsidy. Persons with an income of less than $500 might be formally exempted from the obligation to pay contributions, subject to their compliance with conditions designed to increase their earning capacity (training, placement).

4. Disability, old-age, widows' and orphans' pensions. This scheme would have the same scope as health insurance, and would be administered by the Dominion. . . . Funeral benefit might be attached to pension insurance or to health insurance.

5. Unemployment and sickness insurance. This scheme would be compulsory, at least for industrial and urban wage earners and would be administered by the Dominion. Contributions would be paid by the employers.

6. Workmen's compensation for industrial accidents and diseases.

The second subject discussed in the *International Labour Review* of May, 1943, is proposed health insurance legislation. In February, 1942, the Dominion Government set up an Advisory Committee of Health Insurance under the chairmanship of Dr. J. J. Heagerty, Director of Public Health Services. This committee was given instructions to formulate a health insurance plan. After surveying foreign experience of health insurance, surveying the existing health services of Canada, and consulting organizations of those interested, such as doctors, trade unions, employers and so forth, the committee has prepared drafts of Dominion and provincial legislation entitled "An Act Respecting Health Insurance, Public Health, the Conservation of Health, the Prevention of Disease and Other

Matters Related Thereto". The draft legislation is, we read, accompanied by detailed, descriptive and statistical material which has so far not been printed. A very brief analysis of the proposals is given; more detailed treatment is reserved for a future issue of the *International Labour Review*. The draft legislation consists of a Dominion Bill, and to this is appended a model provincial Bill. The Dominion Bill empowers the Dominion to enter into agreements with each province. In terms of this agreement, the Dominion undertakes to make grants to a province which establishes health insurance on the lines of the model Bill and at the same time provides public health services of the prescribed scope and standard. No Dominion grant is to be payable unless both requirements are satisfied, since the Advisory Committee on Health Insurance considers that health insurance must go hand in hand with a broad programme of preventive health measures. The Dominion grants are to be administered by the Minister of Pensions and National Health. Provision is made for the appointment of a National Council of Health Insurance comprising representatives of organizations of doctors, hospitals, nurses, pharmacists, workers, industry, agriculture, and urban and rural women. The functions of the Council are to be determined by the Dominion Government. The amounts of the grant are not stated in the Dominion Bill, but it is pointed out that the National Health Insurance grant is a fixed sum for each individual entitled to benefit under a provincial scheme, whereas the public health grant is a fraction of the cost incurred by the province for each service. All the provinces have public health legislation, but the Dominion Bill requires them to bring their services up to a prescribed standard of completeness. Among the services which must be provided are: mass radiography for tuberculosis; free treatment of tuberculosis, mental disease and venereal diseases; training of public health staffs; health propaganda; nutrition; industrial hygiene; maternal and infant health service. In principle, the health insurance scheme to be established by a province should cover all persons resident within it, and should provide a complete range of medical services. However, the Dominion Bill empowers the Dominion Government to approve for the purposes of making a grant provincial schemes which do not comply with the model Bill in all respects, in particular in regard to certain areas of a province. Apart from this, the model Bill allows many details to be settled by each province. Subject to any restrictions, such as income limit, that the provincial government may see fit to prescribe, all persons who live within the province and who possess the prescribed contribution qualifications, are to be insured for medical care, together with their dependent children. The Advisory Committee strongly recommends that no class should be excluded from the scope of the scheme. The cost of the scheme will be shared among insured persons, employers of insured persons, the province and the Dominion. The Bill does not prescribe the rate of the actuarial premiums since it is unlikely that the same rate will be appropriate for all the provinces. The Advisory Committee estimates that if the broadest possible coverage and the maximum health services contemplated by the Bill were adopted, then on the basis of statistics for 1938 the premium for an adult and his dependent children would be $26 a year. Contributors to the scheme are described as "employed" and "assessed" contributors. When a person is employed, his status is that of an employed contributor. In these circumstances the amount of the contribution payable by himself and that payable by his employer depends upon the relationship of the premium to a prescribed percentage of his remuneration. An adult who is neither a dependant nor an employed person is an assessed contributor. Assessed contributors pay the entire premium or premiums for themselves and their adult dependants if their income exceeds a prescribed amount which varies according to the number of dependants. All insured persons and their dependent children are entitled to the following benefits: medical, surgical and obstetrical; dental; pharmaceutical; hospital and nursing benefits. These benefits include adequate measures for the prevention of disease and all necessary diagnostic and curative procedures. A health insurance commission will be set up in each province and this body will enter into agreement with organizations representing doctors, dentists, pharmacists and nurses, and with hospitals, concerning the nature of the services to be supplied and the remuneration to be paid for those services. The Bill provides for free choice of doctor (or group of doctors), dentist, pharmacist and even hospital among those covered by the agreement. Doctors and dentists may be remunerated by capitation fee, by fee for service, or by salary. Hospital benefit provides for all necessary treatment in hospitals and convalescent homes other than treatment for tuberculosis and mental disease which must be provided gratuitously by the health authorities. As already mentioned, administration of health insurance in each province will be by a health insurance commission. The chairman of the commission must be a doctor and the provincial director of health is to be a member *ex officio*; the other members represent the same range of interests as are represented on the National Council on Health Insurance. The chairman is also the chief executive officer of the commission. Complaints of insured persons against doctors are to be examined by a committee consisting of doctors and insured persons in equal numbers under an independent chairman.

We now turn to the activities of the Canadian Medical Association in regard to the government proposals that have been described. Readers of THE MEDICAL JOURNAL OF AUSTRALIA should perhaps be reminded that the Canadian Medical Association is an independent organization. It is not part of the British Medical Association, but is affiliated with that body. From *The Canadian Medical Association Journal* of May, 1943, we learn that there are in Canada approximately 10,600 registered practitioners; of these approximately 8,500 are English-speaking, and 2,100 French-speaking. The Canadian Medical Association has 6,388 members, of whom over 300 are French-speaking. At the annual meeting of the Canadian Medical Association in June, 1941, the General Council of the Association learned from the Deputy Minister of Pensions and National Health that his department had made considerable progress in committing to paper proposals and plans for health insurance. The Deputy Minister said that he was not in a position to give details, as they were at the time strictly confidential. He had, however, invited the retiring president and chairman of the General Council of the Canadian Medical Association to a conference to discuss the proposals, and he thought that the Association might be invited to subsequent conferences as the proposals were further investigated. In

the report of the Executive Committee presented at the annual meeting of the Association in June, 1942, it is stated that the General Council was completely in the dark as to what the Minister's proposals might be, but that it was apparent that the time had come for the Association to crystallize its own views and to take such action as it saw fit to state its position to those who were drafting the legislation. In September, 1941, discussions were held at the instance of the Deputy Minister between the Executive Committee of the Association and a group which included the Minister and Dr. J. J. Heagerty, Director of Public Health Services. At the outset it was stipulated that the documents discussed were confidential and were for study purposes only and that their contents should not be revealed outside the committee. The Minister was most anxious to have the considered opinions and views of the Canadian Medical Association in formulating any proposals which might ultimately find their way into legislation. He suggested that if a small committee of the Association was formed to continue the study of the subject, there would be no objections to the committee being in possession of departmental documents. The Executive Committee thereupon appointed a subcommittee which became known as the Committee of Seven. Of this committee Dr. T. H. Leggett, of Ottawa, was chairman, and Dr. T. C. Routley, the General Secretary of the Association, was a member. At a conference with Dr. Heagerty the Committee of Seven decided to send a *questionnaire* to the doctors of Canada in order that the views of the profession might be ascertained, particularly in regard to the principles of health insurance which had been adopted by the Canadian Medical Association in previous years. In April, 1942, some 2,500 replies had been received to the *questionnaire*, and, to quote the Executive Committee's report, "it was abundantly clear . . . that the profession overwhelmingly supported the principles already laid down by the Association". The first question put to the medical practitioners pointed out that profound changes were occurring throughout the whole economic system, and that these were having their effect on medical and health services. The question was whether in the event of major changes being made the medical profession of Canada, through the Canadian Medical Association, should assist in the formulation of plans to meet these changes or of plans which might be put forward as bases for the enactment of health insurance. The number who answered "yes" was 2,144, and 49 answered "no". The *questionnaire* then referred to principles in regard to health insurance adopted by the Association in 1934. These principles had been revised in 1937. The principles were then set out and practitioners were asked to indicate after each one whether or not it had their approval. The following is a list of the principles approved by the profession. The vote was roughly 90% in favour of and 10% against their adoption.

1. That in the Provinces where Health Insurance is established it be administered under an independent Health Insurance Commission, the majority of whom shall be representatives of organized medicine. There should be close co-operation between this Commission and the Provincial Department of Public Health with a view to making full use of preventive services.
2. That a Central Health Insurance Board and Local Insurance Boards be appointed, representative of all interested, to advise the responsible administrative authority.
3. That the professional side of Health Insurance Medical Service be the responsibility of the organized medical profession through the appointment of a Central Medical Services Committee and Local Medical Services Committees to consider and advise on all questions affecting the administration of the medical benefit.
4. That the question of the establishment of local areas for health insurance administration be left to the decision of the individual Provinces.
5. That the whole Province be served by adequate departments of public health, organized where possible on the basis of provision of individual health supervision by the general practitioner.
6. That "Regional Medical Officers" to act as supervisors and referees, be appointed, paid and controlled by the Commission.
7. That medical care for indigents and transient indigents be provided under the Plan, the Government to pay the premiums of the indigents, who then receive medical care under exactly the same conditions as other insured persons.
8. That the Plan be compulsory for persons having an annual income below a level which proves to be insufficient to meet the costs of adequate medical care.
9. That the dependants of insured persons shall be included in the medical benefit.
10. That the only benefit under the Plan be the medical benefit.
11. That the medical benefit be organized as follows:
    (*a*) Every qualified licensed medical practitioner to be eligible to practise under the plan.
    (*b*) The insured persons to have freedom of choice of medical practitioner and *vice versa*.
    (*c*) The medical service to be based upon making available to all a general practitioner service for health supervision and the treatment of disease.
    (*d*) Additional services to be secured ordinarily through the medical practitioner.
        (1) (*a*) Specialist medical service. (*b*) Consultant medical service.
        (2) Visiting nurse service (in home).
        (3) Hospital care.
        (4) Auxiliary services—usually in hospital.
        (5) Pharmaceutical service.
    (*e*) Dental service, arranged direct with dentist or upon reference.
12. That the Insurance Fund should receive contributions from the insured, the employer of the insured and the Government.
    (*a*) Payment of the premium of the insured, in certain proportions to be determined, should be made by the employee, employer and Government.
    (*b*) Where an insured person has not an employer or where it is not practical for the Government to collect from the employer, the Government should pay in for that insured person what would be the employer's share as well as its own share of the premium.
    (*c*) Where the insured is "indigent" or has been out of work long enough to come without the scope of the provisions of the Act as relating to an insured employee, the Government should assume payment of the full premium.
13. That the medical practitioners of each province be remunerated according to the method or methods of payment which they select.
14. (*a*) That the Schedule of Fees in any Health Insurance Scheme shall be the Schedule of Fees accepted by the organized profession in the Province concerned. (*b*) That all Schedules of Fees be under complete control of the organized medical profession in each Province.
15. That the contract-salary service be limited to areas with a population insufficient to maintain a general practitioner in the area without additional support from the Insurance Fund.

16. That no economic barrier be imposed between doctor and patient.
17. That the best possible standard of service be required of the professions and that the remuneration of the professions be consistent therewith.
18. That provision be made for clinical teaching material for medical schools; that facilities be provided for research work; and that time be allowed for post-graduate work.
19. That the plan be actuarially studied and approved before being adopted, and actuarially checked at periodic intervals.
20. That some plan be devised for the provision of pensions for medical practitioners.

The next step took place in January, 1943, when a special meeting of the Council of the Canadian Medical Association was held to consider and to define the position of the Association in regard to health insurance. The Council defined its position in the following resolution, which was adopted unanimously.

> Whereas the objects of the Canadian Medical Association are (i) the promotion of health and the prevention of disease, (ii) the improvement of health services, (iii) the performance of such other lawful things as are incidental or conducive to the welfare of the public.
>
> Whereas the Canadian Medical Association is keenly conscious of the desirability of providing adequate health services to all the people of Canada.
>
> Whereas the Canadian Medical Association has for many years been studying plans for the securing of such health services.
>
> Therefore be it resolved that:
>
> 1. The Canadian Medical Association approves the adoption of the principle of health insurance.
>
> 2. The Canadian Medical Association favours a plan of health insurance which will secure the development and provision of the highest standard of health services, preventive and curative, if such plan be fair both to the insured and to all those rendering the services.

The announcement of this resolution in the *Canadian Medical Association Journal* of February, 1943, is concluded by the following statement:

> At the moment it need only be added that the Council showed complete realization of the important decision with which it was faced, and that this unanimous expression of its policy was only reached after prolonged and sober discussion. There was an excellent representation of delegates from every province; indeed there has been no occasion in our history on which the representation of the medical profession throughout Canada has been better. It was impressive evidence of the earnest and resolute spirit in which our profession is facing its obligations and upholding its standards.

The last page in the present story has to do with a statement presented by Dr. T. C. Routley, General Secretary of the Canadian Medical Association, to the Special Committee on Social Security of the Canadian House of Commons on April 6, 1943. Dr. Routley, who was introduced by the President of the Association, said that the Association had not been content to canvass its own members only, but that it had invited the whole medical profession of Canada to express its views, and the result was that the statement he intended to make expressed the considered views of the medical profession as a whole throughout the Dominion. In the first place, Dr. Routley pointed out that adequate medical care was essential to the welfare of the people, and he drew attention to the handicaps and weaknesses of the present system and to the inadequacies of preventive services. He then discussed the relationship of the Canadian Medical Association to the health insurance question. He quoted the resolution of the Canadian Medical Association's Council of January, 1943, and went on to discuss features which should be included in any plan of health insurance. He insisted that medical knowledge in the prevention and cure of disease was far ahead of the means for its general utilization by the public. He also declared that it was obvious that any plan of health insurance would fail in its objective if it was not supplemented by a programme to ensure better nutrition, better housing and the reduction of worry and anxiety, particularly of those with low and uncertain incomes. He enumerated the several measures that were necessary on the preventive medicine side and referred to general practitioner services, specialists and consultants, additional diagnostic services and other matters such as hospital treatment and dental treatment. Dr. Routley then discussed weaknesses that had been observed in plans of health insurance which were in vogue in other countries and which were therefore to be avoided. One of these had regard to the utilization of friendly or benevolent societies as "carriers" under an act. He said that in one country, although the arrangement had been politically expedient in order to obtain support for the measure, it had become obvious that these carriers had introduced a third party between patient and physician and between citizen and government. Over the years these carriers had developed large surpluses and had now become so powerful that through their membership they could dictate to the government in insurance matters. In another country these societies had "played politics" and had been more concerned with competition for members than with the medical services rendered. In regard to the control of a health insurance scheme, Dr. Routley said that it was extremely important that a sufficient degree of federal control should be retained. Unless there was considerable similarity in methods and programme in matters of disease prevention and control, the results from the national point of view would be jeopardized. In regard to remuneration, it was held that the remuneration of those rendering the service should be reasonable and in conformity with the high standards of service expected of them. In regard to the general practitioner, it was obvious that some variation in the basis of remuneration might be necessary in different areas. In some areas a fee-for-service basis might be desirable; in others a capitation basis might be preferable; in other areas, particularly certain rural areas where the population was small and scattered, a salary basis or a combination of any two of the three methods might prove desirable. Because of this situation it was recommended that the method of remuneration as well as the amount should be left for decision in the individual province after consultation between the Commission and the representatives of the medical profession. In regard to the specialist or consultant, it would seem necessary, Dr. Routley pointed out, to follow a fee-for-service basis. In his concluding remarks Dr. Routley expressed the hope that in the immediate future the medical profession throughout Canada would be permitted to examine the proposals in detail and that shortly thereafter they might be in a position to come back to the Special Committee on Social Security to discuss those aspects of the proposal upon which advice and opinion might be desired.

Current Comment.

INDUSTRIAL DERMATITIS.

THE conduct of the war has meant the additional exposure of many thousands of persons to industrial processes in which substances likely to be injurious to the skin are used, and industrial dermatitis is one of the chief causes of disability. Though the remark may be superfluous, it must be remembered that a skin affection in an industrial worker is not necessarily an occupational dermatitis. So also we have to distinguish between primary skin irritants and sensitizing agents. J. V. Klauder, E. R. Gross and H. Brown in discussing the prevention of industrial dermatitis in 1940[1] remarked that their observations had caused them "to marvel at the efficacy of the human skin in resisting abuse and irritation and to express surprise that there is not a greater incidence of industrial dermatitis than now prevails". Referring to mechanical devices to replace manual contact, exhaust systems, closed processes, clean protective clothing, shower bath facilities, general department sanitation and hygienic practice of the worker, they stated that such measures in the prevention of industrial dermatitis were essentially an engineering problem and were more fundamental than the use of protective applications to the skin and the use of cleansing agents. (It was with cleansing agents that Klauder and his fellow workers were particularly concerned.) They thought that when industry was more mechanized and the worker was better educated in certain respects, the use of protective applications and cleansing agents discussed by them would become an anachronism. In this regard it is interesting to note that S. G. Horner expressed the view[2] that in the majority of cases of industrial dermatitis, even among french polishers, stainers and painters, the cause was not an irritant essentially connected with the work, but was to be found in the cleansers used afterwards.

Industrial dermatitis has received special attention in the United States of America. In 1942 the Committee on Industrial Dermatoses of the Section on Dermatology and Syphilology of the American Medical Association, of which C. Guy Lane was chairman, presented a report to the Congress on Industrial Health.[3] It defined an occupational dermatosis as a pathological condition of the skin for which occupational exposure could be shown to be a major causal or contributory factor. It also defined a primary skin irritant and stated certain criteria for diagnosis. The committee has published another report, and this time it is entitled: "Recognition and Prevention of Industrial Dermatitis."[4] Much of the ground of the present report was covered in the 1942 document; in fact some of the sections in the latter document are reproduced *verbatim* on this occasion. The committee (H. R. Foerster is now chairman) holds that this repetition is justified because of the great increase in occupational dermatitis brought about by war industry.

The committee repeats from the last report the definitions of primary skin irritants and sensitizing agents and also the criteria for diagnosis. A primary skin irritant is discussed in the following way.

1. When a substance in a given concentration, in a given vehicle and after a given manner and length of exposure produces a clinically manifested irritation on the skin of a majority of persons not previously sensitized to that substance, then that substance is a primary irritant under the specified conditions.
2. The irritation may be redness, papulation, vesiculation, ulceration or other sign of damage at the site to which the irritant has been applied.
3. By contrast, substances which produce reactions only on the skin of persons who are hypersensitive to that substance are not primary irritants.
4. A sensitizing agent is one that increases the tissue capacity to react to subsequent exposure.
5. Hypersensitivity means having a greater capacity to react than the normal.

It is recognized that there are limits to these definitions because of complicated circumstances operating in determining the irritating action of a given substance. Among these are the following: the region and size of the area exposed to the irritant; the physiological state of the skin with regard to dryness, oiliness, pigmentation and so on; the general state of health, emotional background, season, diet and actinic rays; the action of two substances neither of which alone exerts an irritant action.

Occupational dermatitis may be differentiated from non-occupational dermatitis by the following criteria:

1. The dermatologic diagnosis is a dermatosis in which the role of an occupational causative factor (major or contributory) has at some previous time been established beyond reasonable doubt.
2. The individual has been working in contact with an agent known to have produced similar changes in the skin.
3. The time relationship between exposure to the agent and the onset of the dermatitis is correct for that particular agent and that particular abnormality of the skin.
4. The site of the onset of the skin disease is the site of maximum exposure.
5. The lesions present are consistent with those known to have followed the reputed exposure or trauma.
6. The individual is employed in an occupation in which similar cases have previously occurred.
7. Some of the individual's fellow workers using the same agent are known by the examiner to have similar manifestations due to the same cause.
8. So far as the examiner can ascertain there has been no exposure outside occupation which could be implicated.
9. If the diagnosis is dermatitis, the following items are important. (*a*) The evidence of previous attacks coming after exposure to an agent followed by improvement and clearing after cessation of exposure constitutes most convincing evidence of the occupational factor as a cause. (*b*) The results of patch tests performed and interpreted by competent dermatologists corroborate the findings of the history and examination in the majority of cases.

The committee realizes that these criteria are difficult of application in certain groups of cases—in sensitization cases, when there is an accentuation of existing skin disease by occupational factors, when supervening complications of other dermatoses and occupational dermatoses are present, when much time has elapsed between the development of the dermatoses and the examination, when over-treatment has taken place.

In regard to prevention of industrial dermatitis, several aspects are considered by the Committee on Industrial Dermatoses. First of all comes the selection of personnel—persons with a history or with evidence of past skin disease of the dermatitis type and those with a type of skin susceptible to dermatitis should be prevented from entering the industry. Secondly, personnel must be instructed, trained and inspected from time to time. The third point of view is that of protection. The measures already mentioned as constituting an engineering problem must be adopted; these will vary with the particular industry concerned and possibly with the different processes undertaken in that industry. When gloves cannot be worn because of a machinery hazard or for some other reason, protective chemical agents may be applied directly to the skin. In the space available the different kinds of applications cannot be described. Of cleansing agents the best is a mild toilet soap and plenty of warm water, but this is as large a subject as that of protective agents and merits a special discussion. The most prevalent and troublesome dermatoses connected with war industry are stated to be those caused by cutting oils, cutting compounds and lubricants. Their prevention is chiefly a matter of personal cleanliness of skin and clothing.

Emphasis in this discussion has been laid on the causation and recognition of industrial dermatitis and prevention has been mentioned. One point remains to be stated—the need for research. Here industrial chemist and medical hygienist find great scope. They should be jointly concerned in every new industrial process.

---

[1] *Archives of Dermatology and Syphilology*, Volume XLI, 1940, page 331.
[2] Quoted by W. N. Goldsmith in "Recent Advances in Dermatology", 1936, page 459.
[3] *The Journal of the American Medical Association*, Volume CXVIII, February 21, 1942, page 613.
[4] *The Journal of the American Medical Association*, June 5, 1943.

Abstracts from Medical Literature.

GYNÆCOLOGY.

Menstrual Tampons.

J. M. SINGLETON AND H. F. VANORDEN (*Western Journal of Surgery, Obstetrics and Gynecology*, April, 1943), believing that the use of vaginal tampons in menstrual hygiene is harmful, have carried out an inquiry on the subject. They sent a *questionnaire* to 3,400 doctors in practice in the United States of America and Canada; 251 replies were received, and 38 of the replies contained no information or expression of opinion. The *questionnaire* was worded in such a way that it was hoped that the authors' personal opinion would not influence the recipient. Of the 211 doctors whose replies expressed an opinion on the subject, 157 were opposed to the use of tampons, 25 were opposed to their use except in a limited sense, and 29 were completely favourable to their use. The authors mention statements of other workers concerning vaginal tampons. They refer to Arnold and Hagele, who found many tampons to be saturated with urine, and those from 18 subjects to have blood clots adherent to the proximal end. From their own investigation and from the reports made by other workers, the authors have drawn several conclusions. (i) Various groups of women are using menstrual tampons; but the majority of women have never tried the method and a fair proportion have discarded it for various reasons. Some enthusiastic advocates of the tampon still remain. (ii) The physicians questioned rejected the method by a majority of four to one. A few favoured it, or permit the use of tampons with limitations, such as during the early and last days of menstruation and for æsthetic reasons *et cetera*. (iii) The use of tampons by virgins was almost unanimously condemned; the fear was expressed that the method might create sex consciousness and stimulate eroticism and the habit of masturbation. The difficulty of application was also stressed. (iv) Repeated mention was made of the danger that a back flow might be created by the formation of blood clot on the proximal end of the tampon, with discharge of the menstrual fluid through the uterus and Fallopian tubes into the peritoneal cavity; it was held that this might be the origin of endometriosis. (v) Of the physicians who replied to the *questionnaire*, 20% reported the occurrence of pathological changes from the use of tampons, varying from mild vaginitis to pelvic infection; many instances of lost or retained tampons were recorded. The authors believe that the habitual or occasional use of vaginal tampons is a potential source of infection and of the aggravation of existing infection.

K. J. KARNAKY (*ibidem*) presents the results of a study of 2,340 women who used vaginal tampons; the study was undertaken with the object of discovering whether the practice was harmful. The author comes to the following conclusions. (i) Unmarried women can use tampons. (ii) Tampons do not cause cancer, erosion or vaginitis. With hardly an exception, in a series of tests on a number of women who wore tampons regularly for periods varying from six months to two years, normal vaginas remained normal, abnormal vaginas became normal, abnormal bacterial flora became normal, the vaginal pH remained normal or returned to normal, biopsy of the vaginal mucosa revealed no abnormal changes, and no changes were found on gross examination. (iii) Vaginal tampons do not block the menstrual flow; they act as a wick to draw away the blood from the cervix. (iv) Tampons do not irritate the delicate vaginal tissue. Two patients attending the sterility clinic, who were using tampons night and morning while attempting to become pregnant, succeeded. They continued the practice during the nine months of pregnancy; no harm resulted, and neither suffered from post-partum infection. (v) Tampons may be used throughout the entire menstrual period, not only at the beginning and end, unless the menstrual flow is excessive. (vi) Tampons overcome the problem of menstrual odour; they may even prevent contamination with microorganisms from the rectum. (vii) Tampons are comfortable and create an improved psychological attitude towards menstruation.

IN an editorial (*ibidem*) direct reference is made to the two papers by Singleton and Vanorden and by Karnaky on the use of vaginal tampons for menstruation. The commentator states that the subject is one that has given rise to heated debate, and that the two papers are distinctly polemical. It is obvious that the authors of both papers feel strongly about their subject matter; they have carried out painstaking research to prove their points. The commentator believes that the use of vaginal tamponade, except for an occasional mechanical purpose and rarely for the application of a medicament, is rather in the discard in modern gynæcological practice. The impulses behind the development of its newer application to "menstrual hygiene" have been (i) the demand by women for a better method of disposal of the menstrual discharge and (ii) advertising propaganda. The first is entirely legitimate; the various factors in the second are decent only in so far as they serve the true needs and stay within the actual demands of the first. The commentator believes that commercial advertising in this field has in general been decently handled. Any breaches of propriety and of scientific accuracy have been on the basis of statements by physicians. He points out that the two papers have been published with the object of casting light onto this poorly illuminated subject. Karnaky's data require subjection to a question and answer forum before they can be digested. The data provided by Singleton and Vanorden are open to certain critical considerations, and the authors' distaste for opposition to their arguments is obvious. The commentator urges the assumption of an impartial attitude towards the subject.

Salpingography.

V. B. GREEN ARMYTAGE (*The Journal of Obstetrics and Gynæcology of the British Empire*, February, 1943) points out the simplicity of procedure in salpingography and the advantageous therapeutic and diagnostic results. He suggests that the immediate benefit in some cases of sterility may be due to the bacteriostatic action of the iodine-containing poppy oil or to the breaking down of adhesions and stimulation of the ciliary activity of the mucous membrane of the tubes. For diagnosis, an expertly prepared hysterosalpingogram will indicate if operation is necessary, and if so, the type of operation most suitable to the individual case. The points he stresses in regard to technique are: (i) No anæsthetic is required. (ii) A straight cannula with no side perforations is preferable. (iii) A fluoroscopic screen is used to observe the passage of the oil and the best moment chosen for the taking of the X-ray picture. (iv) A lateral film is useful to indicate the position of the uterus and its relation to the tubes. A series of films are reproduced to indicate the most common pathological findings and the methods of treatment for these conditions. They include: (i) No filling of the tubes and a rounded appearance of the uterine cornua. This is due to occlusion of the interstitial part of the tubes, and frequently follows septic labour or criminal abortion. Intrauterine tubal implantation gives good results in these cases. (ii) The Fallopian tubes are blocked just beyond the cornua and for their total length. This often follows acute salpingitis and gonorrhœa. Operation is not very hopeful, unless the infection has been light and the block is only at the fimbrial ends. In such, salpingostomy is worth while. (iii) If one tube is blocked and the other shows an oleosalpinx or hydrosalpinx, salpingostomy is worth performing. The use of amnioplastin is of great help in avoiding post-operative adhesions around the newly opened tubal ostium. (iv) If the tubes cannot be seen in the film or they have a typical "dog's ear" appearance at the cornua, a hopeless prognosis should not be given, as this appearance may be due to intense spasm of the sphincter muscles of the tubes. (v) If the uterus is small and hypoplastic and the tubes are long and tortuous, it is fallacious to say that such a patient cannot possibly become pregnant, for normal conception and nidation depend on endocrine harmony. (vi) Previous tuberculous peritonitis or gangrenous appendicitis is a frequent cause of sterility and leads to retroversion and kinking of the tubes by adhesions. This gives a rosary or beaded appearance in the salpingogram. Salpingostomy in these cases is often disappointing owing to the formation of new adhesions following operation. (vii) A filling defect in the uterus may be due to a submucous fibroid and may be the explanation of some cases of sterility. As a postscript the author states that not every patient who is the subject of primary sterility is submitted to hysterosalpingography. If there is a history of dysmenorrhœa or examination reveals a high degree of flexion or displacement, dilatation and insufflation with or without shortening of the round ligaments may be sufficient to cure the sterility.

Basal Body Temperature in Ovarian Disorders and Pregnancy.

ALLAN PALMER (*Surgery, Gynecology and Obstetrics*, December, 1942) has studied the cyclical fluctuations in the basal body temperature of women. In the case of normally menstruating women, although occasional wide variations in the subject's temperature occur, the temperature chart always reveals a biphasic curve. During the

œstrin phase of ovarian activity the temperature is relatively low, and during the progestin phase it is relatively high. The onset of menstruation is associated with a fall in temperature; a rise in temperature occurs approximately at the intermenstruum. The progestin phase of normal ovarian activity is relatively constant; it averages fourteen days in length, whatever the length of the menstrual cycle. Irregularity in the length of normal and abnormal menstrual cycles is attributed to irregularities in the duration of the œstrin phase of ovarian activity. Basal body temperature records can supply information that is of value in the diagnosis of amenorrhœa and menorrhagia; such records have also made possible the demonstration and analysis of the inhibition of ovulation and menstruation by the use of an œstrogen. Sterility apparently due to improper timing of coitus may be overcome by means of the basal body temperature record. From the patient's basal body temperature record it is possible to make the diagnosis of pregnancy as early as, if not earlier than, it can be made from other signs, symptoms or tests. The author recommends the basal body temperature method of investigating ovarian function. He states that it is a procedure within the capacity of any intelligent patient, and that it is as reliable as and far less costly than œstrogen, androgen, gonadotropin and pregnandiol determinations, examination of vaginal smears, estimation of the vaginal pH and vaginal and endometrial biopsies.

The Glycogen Index in the Menopause.

H. C. MACK (*American Journal of Obstetrics and Gynecology*, March, 1943) describes a technique for finding the amount of glycogen in the vaginal cells. The vagina is swabbed with a cotton applicator. The swab is then rolled on a slide; staining is accomplished simply by turning the slide face down over a shallow dish containing Lugol's solution. Iodine vapour, which arises from the solution, suffices to stain the glycogen-containing cells in two or three minutes. Four grades of result are noted, ranging from complete glycopenia to the deeply staining brown iodophilic cells.

OBSTETRICS.

The Rh Blood Factor in Erythroblastosis.

EDITH POTTER, ISRAEL DAVIDSOHN AND ALLAN B. ARUNDON (*The American Journal of Obstetrics and Gynecology*, February, 1943) give a summary of the conclusions so far reached in regard to the Rh blood factor and offer further evidence collected by themselves to support the theories. Summarizing the work of Landsteiner, Wiener and Levine, who were the original discoverers of the Rh factor, they state that the Rh factor is an antigen found in the red blood cells of 86% of all human beings. There are no spontaneously occurring agglutinins for this factor. But, when cells containing the Rh factor are introduced into the blood of a person in whom the factor is absent ("Rh negative"), agglutinins against it may be developed, that is, it has iso-immunizing ability. The introduction of "Rh positive" blood subsequently into such a sensitized person may result in agglutination of the donor's cells in the recipient's blood, even though both individuals are of identical major blood groups. Thus the Rh factor is important in blood transfusions in the 14% of the population who are "Rh negative". It is of further importance in the diagnosis and ætiology of erythroblastosis in infants. Levine and his associates found that in a group of 111 women who gave birth to babies with erythroblastosis, only 9% were "Rh positive", while 91% were "Rh negative". Their theory is that if the fœtus inherits the Rh factor from an "Rh positive" father and the mother is "Rh negative", a break in the placental circulation will result in the introduction of fœtal "Rh positive" cells into the maternal "Rh negative" blood. Iso-immunization of the mother may be thus produced and the antibodies so formed may be transmitted back through the placenta from the maternal blood into the fœtal circulation. These antibodies may adversely affect the hæmopoietic system of the fœtus and produce the condition known as erythroblastosis. The testing of the maternal blood for Rh factor may have a great practical importance. In describing the technique of the test, the authors insist that each specimen should be tested with at least three sera containing anti-Rh agglutinins. Also absence of agglutination should not be declared until after the mixture has been centrifuged for one minute at six hundred revolutions. Finally they advise that known "Rh positive" and "Rh negative" blood cells should be run as a control with each test. The authors' conclusions are as follows: (i) The Rh factor is not a single constant entity, but a mosaic of factors each of which may show some individual variation. (ii) The agglutinins in the rabbit serum are not identical with those produced in human blood. In the series tested by these authors of the mothers who had babies with erythroblastosis, 90% were "Rh negative"; among all of those associated with abortions or deaths from other causes, only 25% were "Rh negative". Practical conclusions drawn by the authors from their work are: (i) If an infant suffering from erythroblastosis is transfused with maternal blood, its condition will only be aggravated. (ii) The contention that these babies should have only "Rh negative" blood donors has no experimental support. (iii) Mothers of erythroblastic babies are mostly "Rh negative" and should be transfused only with "Rh negative" blood. (iv) It is only when the mother is "Rh negative" and the father "Rh positive" that infants with erythroblastosis are likely to be produced, but all such couples do not necessarily produce erythroblastic infants, as there are other factors which may operate.

Placental Transmission of Sulphathiazole and Sulphadiazine and its Significance for Fœtal Chemotherapy.

H. SPEERT (*American Journal of Obstetrics and Gynecology*, February, 1943) states that sulphonamides when orally administered are very slowly absorbed during labour, and only in two cases investigated by him were they detected in the fœtal blood. When, however, 100 cubic centimetres of a 5% solution of sodium sulphathiazole in sterile distilled water is administered intravenously, a blood concentration of 20 milligrammes *per centum* is established. This was given fifteen minutes to six hours before delivery. Sulphathiazole appeared in the fœtal blood almost immediately, and within fifteen minutes a concentration of 5·6 milligrammes *per centum* was present. Although the mother's blood concentration declined, the fœtal blood concentration remained constant. The drug was slower to appear in the amniotic fluid, but subsequently the drug content of the fluid became higher than that of the maternal or fœtal blood, owing to the fœtus excreting it by way of the kidneys. Sulphadiazine reached a much higher concentration in the fœtal blood, but it was much slower to appear in the amniotic fluid, owing probably to its slower excretion. It is suggested that sulphonamides might be administered in labour to protect the fœtus from some intercurrent infection. For example, in prolonged labour, the presence of a concentration of sulphanilamide in the amniotic fluid would serve as a protective agent. Also in the case of a gonococcal infection of the maternal genital tract, a fœtal concentration of sulphanilamide would act as a prophylactic measure against the development of a gonococcal ophthalmia. The infants in this study all appeared normal. However, the authors question the effect on the infant if the drug was given over a long period.

Asphyxia Neonatorum.

W. F. WINDLE AND R. F. BECKER (*American Journal of Obstetrics and Gynecology*, February, 1943) have carried out an experiment on the effect of *asphyxia neonatorum*. That cerebral damage results from anoxæmia has long been known, but the difficulty in obtaining control experiments decided the authors to use the guinea-pig whose placental system is very akin to the human placental system. Intrauterine anoxia was produced either by clamping the uterine vessels or the umbilical cords. Prior to this procedure the mother's abdomen had been anæsthetized and one fœtus delivered to serve as a control. It was noted that only when the oxygen supply to the fœtus was impaired did any respiratory efforts take place. These became greater as the oxygen supply lessened and were accompanied by lack of sphincter control so that the fœtus finally commenced to inhale a mixture of liquor and meconium. Fifty-eight fœtuses were delivered as soon as intrauterine respiratory movement became weak and 45 were delivered some minutes after the cessation of intrauterine respiratory efforts, and resuscitation in this group was delayed until the fœtal heart beat was weak and often too feeble to be palpated. This led to the typical picture of *asphyxia pallida*. The only effective method of resuscitating such apnœic fœtuses was to inflate the lungs rhythmically and gently with oxygen or with oxygen containing 10% of carbon dioxide, the latter mixture being the more effective. All efforts to revive fœtuses by mechanical or electrical stimulation or by the injection of respiratory stimulants proved ineffectual. The asphyxiated fœtuses showed neurological changes, and in 65% of them histopathological changes were found. All the controls' brains were normal, and only slight pathological changes could be found in the remainder.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on May 20, 1943, at the Royal Prince Alfred Hospital, Sydney. The meeting took the form of a series of clinical demonstrations by the members of the honorary medical staff of the hospital.

Acute Hysteria.

DR. NORMAN C. CUNNINGHAM, by courtesy of Professor C. G. Lambie, showed a female patient, aged fourteen years, who had been admitted to another hospital eight weeks previously with the diagnosis of influenzal meningitis. She had had at that time severe headache and vomiting. Rapid improvement followed a course of sulphapyridine therapy, and she was discharged from hospital after fourteen days, apparently cured. Ten days later she developed severe headache and head retraction. Lumbar puncture showed that the cerebro-spinal fluid was under increased pressure, but it contained no cells. The patient was then admitted to the Royal Prince Alfred Hospital with severe headache, vomiting and irregular pyrexia. Head retraction was pronounced, and Kernig's sign was elicited. A provisional diagnosis of tuberculous meningitis was made; but cultural examination of the cerebro-spinal fluid produced no growth of tubercle bacilli or other microorganisms. The chloride content of the fluid was 750 milligrammes *per centum* and the protein content was 20 milligrammes *per centum*; the fluid contained no cells, and it failed to react to the Wassermann test. The optic fundi were normal. The patient was examined by Dr. G. Phillips, who made a diagnosis of acute hysteria following previous meningitis. The diagnosis was confirmed by Professor W. S. Dawson. Dr. Cunningham said that the patient's condition had improved since the diagnosis was explained to her.

Possible Mitral Stenosis and Ulcerative Colitis.

Dr. Cunningham's second patient was a boy, aged twelve years, who had been treated for two years for ulcerative colitis. His heart had been reported normal twelve months earlier. His symptoms on admission to hospital were nausea, tiredness and breathlessness at night of ten days' duration. His blood pressure was 85 millimetres of mercury, systolic, and 30, diastolic. The apex beat was in the fifth intercostal space in the anterior axillary line, and loud systolic and diastolic murmurs were heard at the mitral area. The second pulmonary sound was accentuated. An X-ray examination of the lungs revealed some chronic bronchitic changes in both lung fields. Incubation of the fæces produced a growth of hæmolytic streptococci and *Bacillus proteus*. Examination of the blood on March 24, 1943, showed that the erythrocytes numbered 3,160,000 per cubic millimetre, the hæmoglobin value was 62% and the leucocytes numbered 11,100 per cubic millimetre. On April 15 the erythrocytes numbered 2,400,000 and the leucocytes 8,800 per cubic millimetre; the hæmoglobin value was 45%. The patient's general condition had deteriorated, and he received two blood transfusions, the amounts given being respectively 400 and 600 cubic centimetres. After these his general condition improved greatly, and on April 27 a blood examination revealed that the erythrocytes numbered 4,000,000 and the leucocytes 9,900 per cubic millimetre, while the hæmoglobin value had risen to 75%. The diastolic murmur had disappeared, and the second pulmonary sound was less accentuated. The blood sedimentation rate, which had been 21 millimetres on March 24, was 11 millimetres on May 6. No organisms were grown on attempted culture from the blood. The area of cardiac dulness also appeared to have decreased.

Dr. Cunningham said that the question arose as to whether the case was one of mitral stenosis, or whether the diastolic murmur was a functional murmur. He referred to the work of Goldstein and Boaz, in 1927, on functional diastolic murmurs at the aortic area in anæmia, and postulated that a similar condition could occur at the mitral area.

Hyperovarianism.

Dr. Cunningham then showed a female patient, aged eight years, who had been shown at a clinical meeting at the Royal North Shore Hospital five years earlier, when she was three years old. At that time her symptoms were hæmorrhage *per vaginam*, enlargement of the breasts and mental retardation. The notes made at that time stated that she appeared about four or five years old, and that her breasts were enlarged to the size of those of a girl at puberty. No pubic hair was present. A laparotomy was performed at that time. The right ovary was large, pale and firm; it was four or five times the normal size, with numerous follicles filled with fluid. The left Fallopian tube was represented by a dimple in the left cornu of the uterus, which was normal. The left ovary was apparently absent. The kidneys and adrenals appeared normal. An X-ray examination of the long bones revealed pronounced sclerosis at the lower ends of the shafts of the femora, tibiæ and fibulæ, radii and ulnæ. A plain X-ray film of the urinary tract revealed a large, irregular shadow about one inch below the right sacro-iliac joint. The appearance of the shadow raised the possibility of a dermoid cyst. An excretion pyelogram showed that the shadow was external to the ureter. An X-ray examination after the operation showed that the pelvic shadow had disappeared.

Dr. Cunningham said that the child's mother had reported that the patient had taken *Thyroideum Siccum*, four grains per day, for five years, with apparent benefit to her mentality, and that the size of the breasts had remained stationary. The thyreoid therapy was discontinued for six months; the mother thought that during that period the child's mentality had become worse and that the breasts had increased in size. An X-ray examination made six months prior to the meeting revealed thickening of the skull, enlargement of the pituitary fossa and thinning of the posterior clinoid process. An X-ray examination of the abdomen revealed a calcified pelvic gland or a calcified ovarian mass. At the time of the meeting the patient was taking 60 milligrammes of hexœstrol per day in three divided doses, and her condition was apparently improving. Dr. Cunningham said that oophorectomy would be considered after a full trial of hexœstrol.

Amyotrophic Lateral Sclerosis.

Dr. Cunningham's fourth patient was a female, aged fifty-eight years, who complained of dysphonia of two years' duration, gradually becoming worse. Six months earlier it had been difficult to understand what she was saying; at the time of the meeting it was impossible. She had a wasted tongue, fibrillary twitchings of the tongue, difficulty in pursing her lips, and difficulty in articulation and swallowing. She presented a complete picture of glosso-labio-laryngeal palsy, with a hopeless prognosis. She had been treated with vitamin *E*, *Thyroideum Siccum*, œstrin and iodides in large doses, all without effect, and her condition was progressively deteriorating. Her blood pressure was 170 millimetres of mercury, systolic, and 110, diastolic. The blood serum failed to react to the Wassermann test.

Simple Cyst of the Liver.

Dr. Cunningham finally showed a female patient, aged sixty-two years, who had for the past six years been successfully treated for gastroptosis by means of corsets. The condition was checked by regular fluoroscopic examination. One month prior to the meeting she had complained of a recurrence of her dyspeptic symptoms, for which she blamed new corsets. An X-ray examination revealed that the stomach could not be replaced in its normal position owing to an extrinsic tumour in the right hypochondrium, which pushed the stomach to the left; the gall-bladder and large bowel were also seen to be displaced by an extrinsic lesion. The patient's blood serum failed to react to the Wassermann test, and the complement fixation test for hydatid disease also produced a negative result. The cyst, which arose from the inferior margin of the right lobe of the liver, was completely shelled out by Dr. Eric Fisher.

Dr. Cunningham said that Rodney Maingot had fully discussed the pathology of this tumour in the *British Medical Journal* of December 21, 1940. No previous case could be found in the records of the Royal Prince Alfred Hospital for the past seventeen years.

NEW SOUTH WALES BRANCH NEWS.

THE following books *et cetera* have been added to the library of the New South Wales Branch.

H. J. B. Atkins, "After-Treatment", 1942; W. L. and H. C. Ballenger, "Diseases of the Nose, Throat and Ear, Medical and Surgical", Seventh Edition, 1938; G. E. Beaumont, "Medicine", Fourth Edition, 1942; G. E. Beaumont, "A Pocket Medicine", 1942; Joseph W. Bigger, "Handbook of Hygiene",

Second Edition, 1941; Aleck W. Bourne and Leslie Williams, "Recent Advances in Obstetrics and Gynæcology", Fifth Edition, 1942; Agatha H. Bowley, "The Natural Development of the Child", 1942; Keith Macarthur Brown, "Medical Practice in Old Parramatta", 1937; Ethel Browning, "Modern Drugs in General Practice", 1940; Charles Byrne, "Proposal for the Future of Medical Practice", 1943; K. Campbell, "Aids to Pathology", Eighth Edition, 1941; V. L. Collins, "Diet and Nutrition", 1939; H. M. Davies and R. Coope, "War Injuries of the Chest", 1942; C. Lovett Evans, "Starling's Principles of Human Physiology", Fifth Edition, 1930; E. L. Farquharson, "Illustrations of Surgical Treatment, Instruments and Appliances", Second Edition, 1942; J. W. Field, "Notes on the Chemotherapy of Malaria", 1938; Cyrus Fullerton, "Happiness and Health in Womanhood", 1937; L. P. Garrod and G. Hadfield, "Recent Advances in Pathology", Fourth Edition, 1942; N. A. Gillespie, "Endotracheal Anæsthesia", 1941; V. Goldman, "Aids to Anæsthesia", 1941; P. B. Hawke, O. Bergeim, B. L. Oser and A. G. Cole, "Practical Physiological Chemistry", Eleventh Edition, 1942; C. Langton Hewer, "Recent Advances in Anæsthesia and Analgesia", Fourth Edition, 1943; Evelyn Hurst, "The Poison Plants of New South Wales", 1942; E. B. Jamieson, "Illustrations of Regional Anatomy", Fourth Edition (six sections), 1942; Lucy Jessner and V. Gerard Ryan, "Shock Treatment in Psychiatry", 1942; P. Edwin Jordan, "Standard Nomenclature of Disease and Standard Nomenclature of Operations", 1942; Mary V. Lace, "Massage and Medical Gymnastics", Second Edition, 1941; Norman Lake, "The Foot", Second Edition, 1938; The Lancet Ltd., "The Control of Common Fevers", 1942; R. D. Lawrence, "The Diabetic A B C War-time Supplement", Second Edition, 1942; Sir Thomas Legge, "Industrial Maladies", 1934; H. Philip Manson-Bahr, "Manson's Tropical Diseases", Eleventh Edition, 1942; Alan Moncrieff, "Infant Feeding", 1940; J. C. Mottram, "The Problem of Tumours", 1942; R. Muir, "Textbook of Pathology", Fifth Edition, 1941; Harold E. B. Pardee, "Clinical Aspects of the Electrocardiogram, including the Cardiac Arrhythmias", Fourth Edition, 1941; Sir J. Parsons, "Diseases of the Eye", Tenth Edition, 1942; A. Piney, "Synopsis of Blood Diseases", 1942; A. Piney and S. Wyard, "Clinical Atlas of Blood Diseases", Fifth Edition, 1942; Violet G. Plimmer, "Food Values in Wartime", Second Edition, 1942; Minnie Randell, "Training for Childbirth", Second Edition, 1942; Roche Products Ltd., "Vitamins in Medical Practice", Second Edition, 1943; Sir L. Rogers and Sir J. W. D. Megaw, "Tropical Medicine", Second Edition, 1935; Sir H. Rolleston and A. Moncrieff, "Disorders of Blood Pressure", 1942; W. H. C. Romanis and P. H. Mitchiner, "The Science and Practice of Surgery", Seventh Edition, two volumes, 1941; A. C. Roxburgh, "Common Skin Disorders", Sixth Edition, 1941; W. Gordon Sears, "Anatomy and Physiology", 1941; W. Gordon Sears, "Vade Mecum of Medical Treatment", Third Edition, 1942; William Snow, Clinical Roentgenology of Pregnancy", 1942; Werner Spalteholz, "Hand Atlas of Human Anatomy" (three volumes), Seventh Edition, 1937; Edward J. Stieglitz, "Report of Survey of Active Studies in Gerontology", 1942; M. B. Sulzberger and J. Wolf, "Dermatologic Therapy in General Practice", Second Edition, 1942; W. W. C. Topley and G. S. Wilson, "The Principles of Bacteriology and Immunity", Second Edition, 1938; G. F. Walker, "Handbook of Medicine for Final Year Students", Second Edition, 1942; F. R. M. Walshe, "Diseases of the Nervous System", Second Edition, 1941; L. E. H. Whitby and C. J. C. Britton, "Disorders of the Blood", Fourth Edition, 1942; Bruce Williamson, "A Handbook on Diseases of Children", Third Edition, 1942.

YEAR BOOK SERIES.

George F. Dick and Ors, "General Medicine", 1942; Charles F. Painter, "Industrial and Orthopædic Surgery", 1942; Oswald S. Lowsley, "Urology", 1942.

OXFORD WAR MANUALS.

C. H. Barber, "Tropical and Sub-Tropical Diseases", 1942; R. D. Langdale-Kelham and George Perkins, "Amputations and Artificial Limbs", 1942; R. W. Raven, "The Treatment of Shock", 1942; A. B. Wallace, "The Treatment of Burns", 1941.

GREAT BRITAIN.

Ministry of Health—Emergency Medical Services—Memorandum Number 1—"Structural and other Precautions against Air Raid Risks in Hospitals", 1939; Number 2—"Emergency Hospital Organisation", 1940; Number 3—"Procedure on the Admission, Transfer, Discharge or Death of Casualties, and for the Provision of Out-Patient Treatment", 1940; Number 4—"Memorandum for the Guidance of Medical Officers and other Personnel at First Aid Posts", 1939; Number 5—"Oxygen Administration: Indications, Methods and Types of Apparatus", 1940; Ministry of Pensions—"Artificial Limbs and their Relation to Amputations", 1939; Medical Research Council—Emergency Report Number 3—"The Personal Factors in Accidents", 1942; "Report of the Inter-departmental Committee on the Rehabilitation and Resettlement of Disabled Persons", 1943; Medical Equipment Control Committee, "Australian War Pharmacopœia", 1942; "Annual Report of the British Empire Cancer Campaign", 1941; G. P. Whitley, Council for Scientific and Industrial Research—Bulletin Number 159, "Poisonous and Harmful Fishes", 1943.

JOURNALS.

Archives of Dermatology and Syphilology, from Volume XLV, 1942; *Revue de la Science médicale française du Moyen-Orient*, from Volume I, 1942; *War Medicine*, from Volume I, 1941.

Correspondence.

THE NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL.

SIR: As it would appear from the letter of Dr. J. H. L. Cumpston in your issue of June 12, 1943, that the National Health and Medical Research Council is of the opinion that the statements published in the issue of April 24, 1943, are misleading and do not correctly indicate the functions of that body, I would point out that the statements referred to represent but a very brief report of a lengthy discussion that took place at the meeting of the Federal Council.

So that the position may be clarified, however, I may say that the Federal Council has never been in any doubt as to what the functions of the National Health and Medical Research Council are. What the Federal Council takes exception to is that this body has functions other than those relating to research. That this has always been the attitude of the Federal Council will be seen from the following extract from the letter of the Federal Council in April, 1935, to the Acting Prime Minister urging the formation of a **Medical Research Council.**

This body should:

(*a*) advise in relation to projects for research which are referred by the Commonwealth Government, a State Government or other body or person;
(*b*) initiate, if thought fit, projects for research, and appoint committees of persons to undertake the same, and report to them;
(*c*) supervise any research work which is sustained by a grant from its funds;
(*d*) terminate any research work sustained by a grant from its funds which is not being properly conducted, or is not likely to yield profitable results;
(*e*) supervise and control the expenditure of any sums allotted to it by the Commonwealth or State Governments or municipal or other body, or which are the subject of private gift or bequest;
(*f*) furnish annually a report and financial statement to the Minister of Health;
(*g*) discharge any other functions which may be associated with medical research.

The Federal Council is emphatically of the opinion that the Medical Research Council must in no sense be regarded as a departmental committee of the Ministry of Health. It should be entirely divorced from departmental control, and exercise an independence of a judicial character.

In requesting the formation of a Medical Research Council the Federal Council had in mind the similar body in Great Britain, the functions of which are confined entirely to research.

Holding the view that it does regarding the functions of the National Health and Medical Research Council, the Federal Council, acting for and on behalf of the Branches of the British Medical Association in Australia, must reserve to itself freedom of action in all medico-political matters.

Yours, etc.,

J. G. HUNTER,
General Secretary, Federal Council of the British Medical Association in Australia.

135, Macquarie Street,
Sydney,
July 21, 1943.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 165, of July 29, 1943.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Ante-dating Seniority.—The seniority of Temporary Surgeon Lieutenant (D) John Ellis Newton is ante-dated to 15th January, 1940.

Emergency List.

Promotion.—Surgeon Lieutenant Lowen Alexander Hardy is promoted to the rank of Surgeon Lieutenant-Commander, dated 10th March, 1943.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Surgeon Lieutenants Clifford Kelvin Churches and Archibald McLaren Millar are promoted to the rank of Surgeon Lieutenant-Commander, dated 15th June, 1943, and 30th June, 1943, respectively.

ROYAL AUSTRALIAN AIR FORCE.

Reserve: Medical Branch.

Basil Starr, M.B., B.S. (257522), is appointed to a commission on probation with the rank of Flight Lieutenant with effect from 10th May, 1943.—(Ex. Min. No. 151—Approved 27th July, 1943.)

CASUALTIES.

ACCORDING to the casualty list received on July 27, 1943, Captain S. D. Foley, A.A.M.C., Darlinghurst, Captain B. F. Hindmarsh, A.A.M.C., Macksville, and Major I. H. Sender, A.A.M.C., Bondi, who were previously reported missing, believed drowned, are now reported to have been drowned by enemy action.

According to the casualty list received on July 28, 1943, Major C. E. Thelander, A.A.M.C., Brisbane, who was previously reported missing, believed drowned as a result of enemy action, is now reported to have been drowned by enemy action.

According to the casualty list received on July 30, 1943, Lieutenant-Colonel C. P. Manson, A.A.M.C., Hawthorn, Captain G. L. Thomas, A.A.M.C., Malvern, and Captain R. C. Johnston, A.A.M.C., Drumsara, Mossman, Queensland, who were previously reported missing, believed drowned, are now reported to have been drowned by enemy action.

According to the casualty list received on July 30, 1943, Captain E. Falloon, A.A.M.C., Wonthaggi, is reported to have been removed from the seriously ill list.

According to the casualty list received on August 2, 1943, the undermentioned, who were previously reported missing, believed drowned, are now reported to have been drowned by enemy action: Captain L. L. Bedkober, A.A.M.C., Gerapna, Forbes; Major G. G. Cooley, A.A.M.C., Edgecliff; Major L. Holland, A.A.M.C., North Sydney; Major G. R. Jones, A.A.M.C., South Grafton.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Hunter, John Michael, M.B., B.S., 1943 (Univ. Sydney). Saint Vincent's Hospital, Darlinghurst.

Mocatta, Frances Arkell, M.B., B.S., 1943 (Univ. Sydney). Rachel Forster Hospital, 150, Pitt Street, Redfern.

Books Received.

"Urology in General Practice", by Nelse F. Ockerblad, B.S., M.D., F.A.C.S., and Hjalmar E. Carlson, B.S., A.M., M.D., F.A.C.S.; 1943. Chicago: The Year Book Publishers, Incorporated. 8¼" x 5¾", pp. 383, with 98 illustrations.

Diary for the Month.

AUG. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUG. 10.—Tasmanian Branch, B.M.A.: Branch.
AUG. 13.—Queensland Branch, B.M.A.: Council.
AUG. 17.—New South Wales Branch, B.M.A.: Ethics Committee.
AUG. 18.—Western Australian Branch, B.M.A.: Branch.
AUG. 19.—New South Wales Branch, B.M.A.: Clinical Meeting.
AUG. 24.—New South Wales Branch, B.M.A.: Medical Politics Committee.
AUG. 25.—Victorian Branch, B.M.A.: Council.
AUG. 26.—New South Wales Branch, B.M.A.: Branch.
AUG. 27.—Queensland Branch, B.M.A.: Council.
SEPT. 1.—Victorian Branch, B.M.A.: Branch.
SEPT. 1.—Western Australian Branch, B.M.A.: Council.
SEPT. 2.—New South Wales Branch, B.M.A.: Special Groups Committee.
SEPT. 2.—South Australian Branch, B.M.A.: Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad *per annum* payable in advance.

Medical Practices, etc.

Country and Suburban Practices for Transfer.

Particulars Supplied in Confidence.

Locums, Assistants, etc.

COYDER, SON & CO.,
Medical Agents,
Lothcart House, 11c Castlereagh Street, Sydney. BW 7149.

Australian Physiotherapy Association
(Australasian Massage Association)
NEW SOUTH WALES

Massage, Remedial Exercises and Medical Electricity. Occupational Therapy.

Members are fully trained in these subjects and work only under the direction of a registered medical practitioner.
Further information obtainable from the Secretary,
MISS E. P. EVANS,
185 Elizabeth Street, Sydney.
(MA 2031.)

PERCIVAL D. OLLÉ
M.S.R., B.P.A., N.R. (Eng.),
Masseur, Physio-Therapist.
Short and Ultra-Short Wave, 5 to 30 Metres. At rooms only owing to screening. Ultra-Violet, Infra-Red, Diathermy, Ionotophoresis. Physical injuries treated.
"Wembury",
61 Elizabeth Street, Ashfield.
Telephone UA 1097.

CHIROPODY
Master Chiropodist,
Room 19, Fourth Floor, Challis House,
30 MARTIN PLACE, SYDNEY.
'Phone BW 6642.
T. R. CHRISTIE,
Diploma Scientific Chiropody.

Service for Doctors

Watson House, Bligh Street, Sydney. Telephone BW 4433.

Practice in large country town. All hospital facilities, good takings, excellent house. In growing district.

Suburban — Growing Practice. Hospital facilities, a number of lodges. Purchase of house optional, will rent. Terms available.

Death Vacancy, Suburban. Medium Sized Practice.

WATSON VICTOR LIMITED
LICENSED BUSINESS AGENTS
117 Collins Street, Melbourne
105 Eagle Street, Brisbane
And at Perth and Adelaide

FOR SALE, complete contents of Brisbane practitioner's surgery. Furniture, instruments, card index, etc. Apply "Medico", Gordon and Gotch, Brisbane.

W. RAMSAY (Surgical) Pty Ltd
SURGICAL INSTRUMENTS AND HOSPITAL APPLIANCES
Latest Medical and Surgical Books Available
Sole Australasian Agents "BECKS"
W. RAMSAY (Surgical) Pty. Ltd.
340 Swanston St., Melbourne
18 Howard Street, Perth
11 Austin St., Adelaide

REPATRIATION COMMISSION.

VACANCY FOR MEDICAL OFFICER.

Applications are invited for appointment to a newly created position of Medical Officer, Repatriation General Hospital, Brisbane.

The appointment will be on probation for a period of six months and salary is subject to cost of living adjustments. The existing salary range is:

£760 per annum—on commencing duty.
£796 per annum—second year.
£832 per annum—third year.
£868 per annum—fourth year.
£904 per annum—fifth year.
£952 per annum—sixth year (maximum).

Increments within the range are subject to satisfactory service and to the nature of the duties justifying the increases.

On confirmation of appointment, the appointee will be required to make contributions under the Superannuation Act.

Permanent quarters are not available, but when required to remain at the institution overnight or during week-ends, sleeping accommodation will be arranged and a charge of 1s. will be made for each meal provided.

Applicants should state whether they are married or single, their age, war service (if any), and should forward copies of testimonials. The successful applicant will be required to meet the cost of his transportation to Brisbane, and private practice will not be allowed.

Applications should be lodged not later than Saturday, 28th August, 1943, with the Deputy Commissioner for Repatriation in the capital city of the State in which the applicant resides.

ROYAL HOSPITAL FOR WOMEN, PADDINGTON.

(Benevolent Society of New South Wales.)

APPLICATIONS, on prescribed forms, are invited for RESIDENT MEDICAL OFFICERS (2). Term six months, commencing 1st October, 1943. Salary at the rate of £150 p.a. Canvassing of Directors is prohibited. Applications close 27th August, 1943.

W. B. RODD,
Secretary.

General Offices,
Thomas Street,
Sydney.

TO LET.—FRONT SUITE TWO ROOMS, suit medical or dental profession, "BEANBAH", 235 Macquarie Street, Sydney. Rent £3 10s. per week. Apply Superintendent on premises or
H. W. HORNING & CO. PTY. LTD.
Licensed Real Estate Agents,
15 Martin Place, Sydney. B 6227-8.

HALLAM
PTY. LTD.
Pharmaceutical Chemists
(Est. over 50 years)

Specialise in Dispensing the laboratory requirements of Physicians and Surgeons.
Microscopic Stains.
Intravenous Solutions.
Anæsthetics, etc.

•

Agents in New South Wales for all products of
Evans Sons Lescher & Webb Ltd., London

•

Pharmacies near Macquarie Street:
168 King Street.
Corner Phillip and Bent Streets.
Corner Hunter and Elizabeth Streets.
83 Elizabeth Street.

•

Head Office:
312 GEORGE STREET
(opposite Wynyard Station)
14 Pharmacies SYDNEY and SUBURBS

FOR SALE

•

DEATH VACANCY,
Northern City.
Large Practice.

•

WESTERN TOWN.
Partnership for Surgeon, or Whole Practice.

•

British Medical Agency of New South Wales Ltd.
B.M.A. HOUSE, 135-137 MACQUARIE STREET, SYDNEY

FOR ALL MEDICAL AGENCY SERVICE CONSULT YOUR OWN AGENCY

IF YOU ARE DESIROUS OF SELLING YOUR PRACTICE LIST IT WITH US NOW

Members of the Profession desiring to retire or change in the post-war period or now should forward particulars to us now. Enquiries for Partners or Assistants will also be welcomed. Applicants for Locums and Assistantships wanted.

INSURANCE OF ALL KINDS EFFECTED—COPYING, DUPLICATING, MSS., MEETING NOTICES

FINANCIAL ASSISTANCE FOR THE PURCHASE OF PRACTICES IS AVAILABLE IN APPROVED CASES

Telephone B 4159. After Hours XM 5572. Telegrams: "Locumtens Sydney". F. W. DOUTCH, Manager.

★ A Portable Source of Infra-Red Rays for Use in the Ward and in the Patient's Home

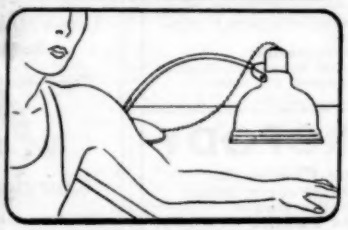
WHEN infra-red radiation is required in the treatment of in-patients—more especially those unable to attend the Physical Therapy department—the WatVic Infratherm Table Model is the ideal apparatus for convenient use.

This model may be placed on the locker or bed-table, the wide reach of the supporting arm enabling the rays to be focussed on any part of the patient.

The WatVic Infratherm Table Model makes it possible for every ward to have its own source of infra-red radiation—light, convenient and inexpensive apparatus always ready at hand.

The Table Model is the unit chosen by many practitioners and masseuses. It may be taken to the patient's home in the car—or by hand if desired. The unit is smartly finished in polished nickel, and is supplied ready for plugging into any electrical outlet.

Send the coupon for further particulars of the Infratherm Table Model and its application in infra-red radiation therapy.



WATSON VICTOR LIMITED

AUSTRALIA NEW ZEALAND

Watson Victor Limited,
Watson House, Bligh Street, Sydney.

Please send me particulars (without obligation) of the Infratherm Table Model for light and infra-red treatment.

Name .....

Address .....

Wholly set up, printed and published at the Printing House, Seamer Street, Glebe, Sydney, N.S.W., by ARTHUR FREDERICK ROOTS SIMPSON, of Fairholm Street, Strathfield, New South Wales, on behalf of the AUSTRALASIAN MEDICAL PUBLISHING COMPANY LIMITED, Seamer Street, Glebe, Sydney, New South Wales.